

How Seattle City Light can support private investment in charging infrastructure for medium- and heavy-duty vehicles

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INTRODUCTION

As Seattle's municipal electric utility, Seattle City Light (hereafter, City Light) has a key role to play in advancing the city toward its transportation electrification goals, including a target that 30% of goods deliveries will be performed by zero-emission vehicles (ZEVs) by 2030.¹ The utility is working with local fleets to accelerate the adoption of ZEVs, which may reduce local communities' exposure to harmful air pollutants and decrease greenhouse gas emissions from the transport sector. Recognizing the challenges of electrifying medium- and heavy-duty vehicles (MHDVs), City Light is working with organizations to research and estimate the charging and energy needs of these vehicles within its service area.

City Light supports a public charging network for passenger vehicles and is exploring whether to construct and operate a similar charging network for zero-emission MHDVs (ZE-MHDVs).² The utility also aims to accelerate private investment in charging infrastructure for ZE-MHDVs and is considering offering incentives and programs for

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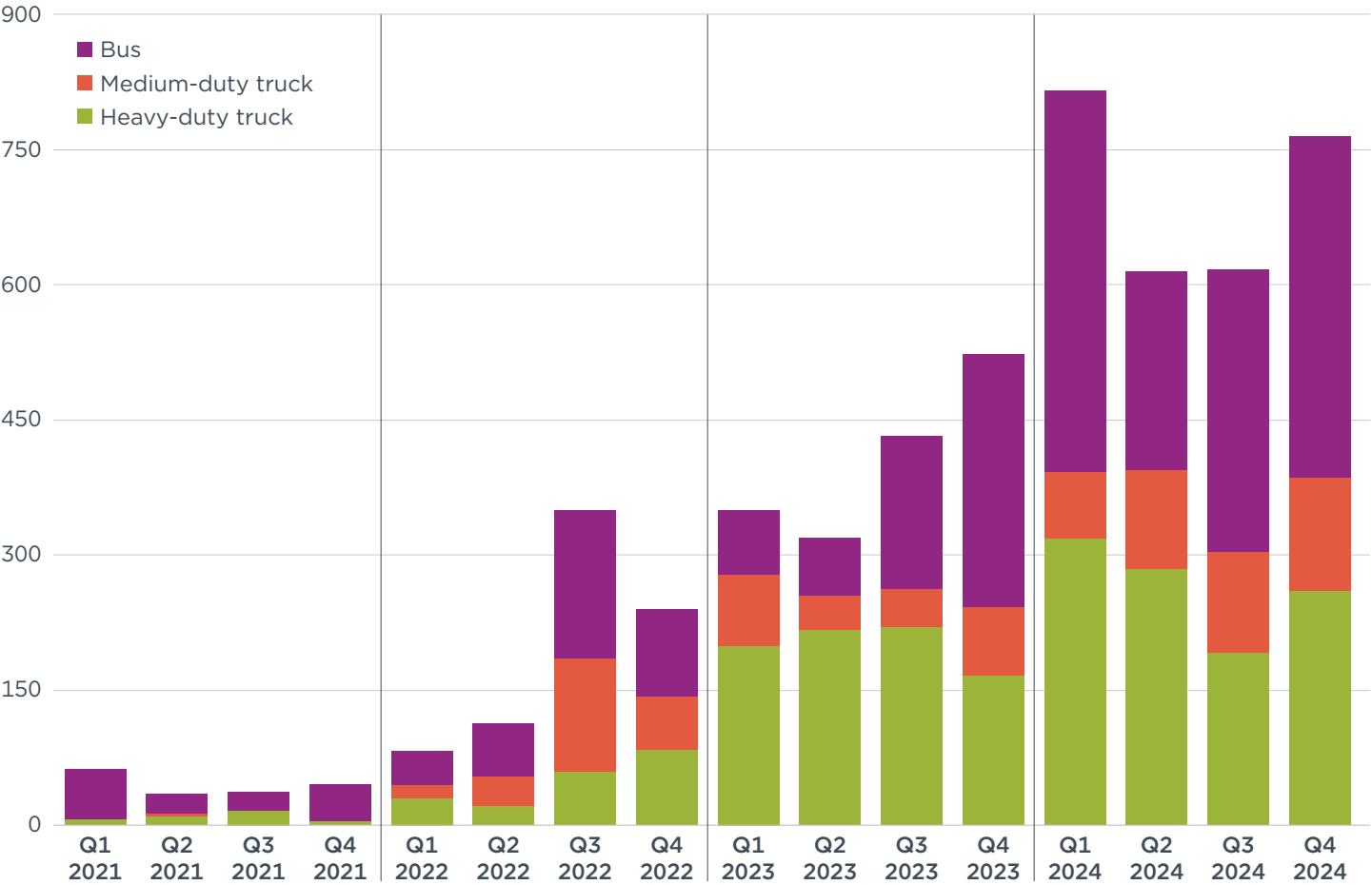
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- 1 City of Seattle, *Seattle's Clean Transportation Electrification Blueprint* (2021), <https://www.seattle.gov/Documents/Departments/OSE/ClimateDocs/TE/Final%20Transportation%20Electrification%20Blueprint.pdf>.
- 2 "Electric Vehicles: City Light Charging Network," Seattle City Light, accessed on January 3, 2024, <https://seattle.gov/city-light/residential-services/home-energy-solutions/electric-vehicles#sclcharging>.

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existing and new customers.³ By the end of 2023, over \$4 billion in private investments had been announced to support the deployment of ZE-MHDV charging nationwide, amid growing sales of ZE-MHDVs (Figure 1).⁴

Figure 1
Registrations of new ZE-MHDVs in the United States by type, 2021-2024



Source: Fadhil and Xie, *Race to Zero*.

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To support the development of its long-term charging infrastructure strategy, City Light asked the ICCT to connect with stakeholders, including charging-as-a-service (CaaS) providers, and to evaluate other utilities’ electrification programs and incentives to highlight additional steps that City Light could take to support private investment in charging infrastructure. This brief summarizes our observations. The next section reviews City Light’s approach to transportation electrification and

³ Seattle City Light, *Transportation Electrification Strategic Investment Plan*, (January 29, 2025), <https://seattle.gov/documents/Departments/CityLight/Energy/TESIP.pdf>
⁴ Nicole Lepre, “Estimated \$30 Billion Committed to Medium- and Heavy-Duty Charging Infrastructure in the United States,” *Atlas EV Hub* (blog), January 26, 2024, https://www.atlasvehub.com/data_story/estimated-30-billion-committed-to-medium-and-heavy-duty-charging-infrastructure-in-the-united-states/; Ilma Fadhil and Yihao Xie, *Race to Zero: Zero-Emission Bus and Truck Market in the United States, 2024* (International Council on Clean Transportation, 2025), <https://theicct.org/publication/r2z-zero-emission-bus-and-truck-market-us-2024-jun25/>.

discusses the sources used to evaluate the developing ZE-MHDV and charging infrastructure industries and solutions being offered by electric utilities. We next discuss City Light’s 2025–2030 *Transportation Electrification Strategic Investment Plan* and how it can guide the implementation of new services, programs, and grid infrastructure investments. For City Light’s consideration, we then highlight strategies to encourage charging infrastructure investment that are being deployed by a range of actors in the MHDV electrification space. We end by summarizing our main observations and policy considerations.

RESEARCH APPROACH

We reviewed strategic plans by both City Light and the City of Seattle that discuss transportation electrification priorities and plans to overcome identified challenges (Table 1). In addition, we reviewed the utility’s programs and services for fleets and other customers looking to electrify and deploy charging infrastructure, and primary and secondary industry sources that outline other stakeholder perspectives and utility actions to encourage private investment in charging infrastructure.

Table 1
Key strategic planning documents reviewed

Document	Date	Purpose
<i>Transportation Electrification Strategy</i> ^a	2019	Evaluates the existing ZEV market, explores the potential grid impacts of transportation electrification in Seattle, and suggests actions for City Light
<i>Transportation Electrification Strategic Investment Plan</i> ^b	2020, 2025	Describes how City Light will direct its investments to achieve the transportation electrification priorities of the City of Seattle
<i>Clean Transportation Electrification Blueprint</i> ^c	2021	Presents Seattle’s 2030 electrification targets, potential challenges, and ways the city will address those challenges
<i>Electrification Assessment</i> ^d	2022	Examines the impacts of electrification of different sectors on City Light and offers strategies to approach electrification challenges
<i>Powering Seattle Fleets</i> ^e	2024	Estimates the charging needs of ZE-MHDVs in 2030 and 2035 and provides recommendations for City Light to accelerate charging infrastructure deployment

^a Lynn Daniels and Brendan O’Donnell, *Seattle City Light Transportation Electrification Strategy* (Rocky Mountain Institute, 2019), <https://rmi.org/wp-content/uploads/2019/06/rmi-seattle-city-lights.pdf>.
^b Seattle City Light, *Transportation Electrification Strategic Investment Plan* (2025), <https://seattle.gov/documents/Departments/CityLight/Energy/TESIP.pdf>.
^c City of Seattle, *Seattle’s Clean Transportation*.
^d Alexander et al., *Seattle City Light Electrification Assessment* (Electric Power Research Institute, 2022), <https://powerlines.seattle.gov/wp-content/uploads/sites/17/2022/01/Seattle-City-Light-Electrification-Assessment.pdf>.
^e Hamilton Steimer et al., *Powering Seattle Fleets: A Charging Infrastructure Strategy for Battery Electric Medium- and Heavy-Duty Vehicles* (International Council on Clean Transportation, 2024), <https://theicct.org/publication/powering-seattle-fleets-charging-infrastructure-strategy-for-battery-electric-medium-and-heavy-duty-vehicles-may24/>.

We also examined utility proceedings on MHDV electrification in California, which has emerged as the leading ZEV market in the United States and could offer industry perspectives and policy options relevant to Seattle and other markets. Specifically, we reviewed ZE-MHDV stakeholder comments in the California Public Utilities Commission (CPUC)’s High Distributed Energy Resources (DER) (R.21-06-017) and Energization Timelines (R.24-01-018) proceedings. The High DER proceeding covers improvements to the distribution planning process, project execution process, and integration of data portals and hosting capacity.⁵ The Energization Timelines proceeding established

⁵ Proposed Decision Adopting Improvements to Distribution Planning and Project Execution Process, Distribution Resource Planning Data Portals, and Integration Capacity Analysis Maps, 21-06-017 (September 13, 2024), <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M539/K999/539999224.PDF>.

maximum energization time periods for customer projects, including charging facilities.⁶ We also reviewed utility proceedings relevant to MHDV electrification in other states, including Texas and New York. For example, in August 2024, the New York Department of Public Service announced its Proactive Planning for Upgraded Electric Grid Infrastructure proceeding (Case 24-E-0364) to establish procedures for evaluating potential loads and engaging in proactive grid development.⁷ Collectively, these shed light on what private infrastructure providers need from electric utilities.

Next, we interviewed CaaS providers and staff from other electric utilities to learn what charging providers hear from their fleet customers, how they design their business models, and what challenges and opportunities arise when working with electric utilities. We spoke with several program managers at Consolidated Edison (ConEd), an investor-owned utility in New York, about the effectiveness of its electrification programs and working relationships with fleets and other stakeholders. Finally, we reviewed the program offerings from electric utilities heavily engaged in MHDV transportation electrification, including ConEd, the Sacramento Municipal Utility District (SMUD), and Commonwealth Edison (ComEd), to learn about their effectiveness and how they were advertised to customers. Published program progress reports often have information about the spending of allocated funds, customer participation, and potential challenges with program implementation. For example, the Joint Utilities of New York published information about its former DCFC Per-Plug Incentive Program.⁸

COMMUNICATING GOALS AND PLANS

Seattle's *Transportation Electrification Blueprint* and City Light's *Transportation Electrification Strategic Investment Plan* (TESIP) define priorities and how to achieve objectives.⁹ These plans also serve as a communication tool for employees and external stakeholders about the work the utility will pursue.

The recently approved TESIP will serve as the foundational transportation electrification planning document for City Light over the next 5 years. The plan outlines the context for transportation electrification in Seattle, including the growing ZEV population and anticipated charging needs through 2038. It also details City Light's community engagement process and includes community perspectives on transportation electrification and the utility's role. Additionally, the TESIP describes City Light's investment strategy, including plans to support charging infrastructure build-out in various subsectors; identify new technologies, possible grid investments, and funding sources to enable transportation electrification; and expand its outreach to ensure the utility's services meet customers' needs.

Regarding MHDVs, the TESIP briefly discusses how commercial fleets are confronted with high purchase costs, limited vehicle availability, and the frequent need for upstream grid capacity upgrades to energize their higher-powered chargers. The strategy also recognizes that the electrification of the transportation sector could

6 Decision Establishing Target Energization Time Periods and Procedure for Customers to Report Energization Delays, No. 24-01-018 (September 12, 2024), <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/infrastructure/energization>.

7 Order Establishing Proactive Planning Proceeding, No. 24-E-0364 (August 15, 2024), <https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=73733>.

8 "Electric Vehicles: DCFC Per-Plug Incentive Program," Joint Utilities of New York, last modified March 20, 2023, https://jointutilitiesofny.org/ev/dcfc_incentive_program.

9 City of Seattle, *Seattle's Clean Transportation*; Seattle City Light, *Transportation Electrification Strategic*.

contribute up to 250 MW, or 20%, of the city's total electric load by 2045, up from 1% currently. City Light has already begun planning grid infrastructure investments aligned with its projected load forecast, which can serve as a charging infrastructure roadmap for the utility, guiding where and when grid infrastructure investments should be made throughout the service area. City Light has begun to develop modeling tools to inform fleets and CaaS providers about the parts of its service area that are ready to support charging infrastructure deployment, and will soon offer a commercial rate to fleet customers.

A May 2024 ICCT report analyzed future charging and energy needs for ZE-MHDVs in City Light's service area.¹⁰ It suggested a series of actions the utility could take to support investing in charging infrastructure, such as developing ample grid capacity in zones where charging infrastructure will be needed. The ICCT report identified the southern part of the service area as a likely hotspot for ZE-MHDV charging needs, due to the high concentration of fleet activity that services nearby warehouses, distribution centers, and the Ports of Seattle and Tacoma. If the utility concludes it cannot provide the necessary power to this region for future ZE-MHDV charging in the near term, it may need to determine where grid capacity upgrades are possible and communicate timelines to customers.

City Light's charging infrastructure goals can be guided by state and local targets, including Seattle's 2030 goal for 30% zero-emission goods deliveries and the state's ZEV sales requirements under the Advanced Clean Trucks (ACT) rule.¹¹ Implementation of the ACT rule has been temporarily paused, and City Light can monitor and reassess the expected growth of the ZE-MHDV market if the regulation is eliminated. Targets could also be guided by ZE-MHDV total cost of ownership (TCO) projections and other data, including projections for Washington's *Transportation Electrification Strategy*.¹²

Additional information about how the utility plans to engage and support different types of stakeholders can also benefit fleets and CaaS providers. For instance, large and small fleets may seek information on financial incentive options and require utility assistance in navigating the complex interconnection and incentive application processes. Charging providers, meanwhile, may need assistance with costs for upgrading grid capacity or desire additional data to quickly assess potential charging locations.

Excluding its projects focused on public transit and maritime electrification, City Light currently offers three main services for fleet electrification (Table 2).¹³ Several major investor-owned utilities and municipal utilities provide additional services for ZE-MHDVs, such as commercial fleet make-ready programs, TCO calculators, hosting capacity maps, and streamlined and predictable energization processes and timelines. While the TESIP suggests City Light plans to offer further customer solutions such as data to customers to help with investment decisions, additional services could be developed.

10 Steimer et al., *Powering Seattle Fleets*.

11 "Complying with Vehicle Emissions Standards: Manufacturer Information," Washington State Department of Ecology, accessed on January 3, 2024, <https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions/clean-vehicles/vehicle-emission-standards>.

12 Washington Electric Vehicle Council, *Washington State Transportation Electrification Strategy* (2023), https://public.tableau.com/app/profile/waevcouncil/viz/WashingtonTransportationElectrificationStrategy/Story_Published.

13 "Fleet Electrification Program: Business Solutions," Seattle City Light, last modified May 14, 2025, <https://seattle.gov/city-light/business-solutions/renewable-energy-services/fleet-electrification-program#makereadyrebates>.

Table 2
Seattle City Light fleet electrification services

Service	Strength	Potential limitation
Fleet advisory services	Cover topics like estimated cost savings, charger and vehicle recommendations, and assistance with accessing grants and other incentives	Services are performed by ICF, a global consulting firm, which potentially limits the diffusion of fleet information to City Light staff
Charger rebates	Incentives include rebates for Level 2 and DC fast chargers and for make-ready infrastructure for select customers	Only Tier 2 customers (those in overburdened communities) are eligible for the full award amount
EV catalog	Covers different types of ZE-MHDVs	Additional useful information for fleets and vehicle operators, such as TCO calculations, is missing

STIMULATING PRIVATE INVESTMENT IN CHARGING INFRASTRUCTURE

Our review of utility programs, regulatory proceeding materials, and consultations with stakeholders identified several financial and non-financial opportunities for City Light to encourage private investment in MHDV charging infrastructure and thus accelerate electrification efforts. These opportunities fell into three categories: developing internal expertise and transparency, proactively expanding grid capacity, and providing incentives to cover some of the costs of MHDV electrification. More broadly, industry stakeholders have indicated that if energization timelines are too long, they will move their projects to other locations where capacity is more readily available.¹⁴ Therefore, effective strategies City Light could consider include quickly connecting with new customers, providing sufficient grid capacity, and addressing cost challenges.

DEVELOPING INTERNAL EXPERTISE, EFFICIENCY, AND TRANSPARENCY

A foundation of internal expertise, procedural efficiency, and transparent data sharing can make it easier for fleets and charging infrastructure developers to work with City Light. Our conversations with stakeholders and reviews of utility proceeding comments revealed that fleets and charging infrastructure developers value quick communication with utility staff. Frequently, these businesses mentioned wanting a single point of contact at the utility with whom they can connect to understand grid capacity availability at a particular site, energization requests, and available support.¹⁵ City Light could consider adding staff with experience in commercial electric vehicles who understand how factors like the TCO of ZE-MHDVs can evolve due to technology improvements and incentives and how such factors influence fleet decision-making.

While developing its Electric Trucks Incentive Pilot, Seattle’s Office of Sustainability stated to the ICCT that there was a significant information gap about electric trucks,

14 Opening Comments of Voltera Power LLC on the Assigned Commissioner’s Scoping Memo and Ruling, Paul D. Hernandez, May 3, 2024, <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M531/K248/531248909.PDF>.
15 Opening Comments of Powering America’s Commercial Transportation on the Staff Proposal for the High Distributed Energy Resources (DER) Proceeding, David Bonelli, May 28, 2024, <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M532/K673/532673787.PDF>.

charging, and funding opportunities in the local drayage sector.¹⁶ City Light could consider hosting in-person workshops with local businesses about transportation electrification and the role of the utility in supporting the transition to zero-emission fleets, as has been done by the Texas-based utility Oncor through its EVolutions sessions.¹⁷ Online content and community outreach on topics such as how charging works, grant and incentive opportunities, and important procedures like the energization application process can fill this information gap.

Streamlined processes and clearly communicated timelines would allow fleets and CaaS providers to quickly assess project opportunities. Charging infrastructure developers voiced to utility regulators in California that they want certainty and flexibility about energization timelines.¹⁸ Terawatt Infrastructure recommended that utilities improve their project management tools, adopt an efficient online management system, fully staff their transportation electrification teams, and give customers access to utility requirements and procedures that cover the entire energization process.¹⁹ Powering America's Clean Transportation (PACT), an interest group for charging providers, fleets, and vehicle manufacturers, said that they would benefit from regular updates on their position in the interconnection queue and who is responsible for each step of the energization process.²⁰ Voltera Power, a charging infrastructure provider, similarly suggested a "visibility of schedule" with a time-stamping process so that customers can track steps in the energization process as they move between teams internally within the utility.²¹

Updated hosting-capacity maps are viewed as an essential tool to facilitate charging infrastructure deployment. CALSTART noted that many capacity maps are often too inaccurate to be relied on for project-siting decisions and that this potentially disincentivizes infrastructure development.²² PACT stated that capacity maps should display up-to-date "investment-grade" data used by site developers, such as vehicle telematics, to obtain project approval.²³ PACT and Voltera Power have also asked that these maps be updated more frequently, on a bi-annual or monthly basis.

Stakeholders also requested that hosting-capacity maps reflect the timelines for planned grid capacity upgrades, as that would help CaaS developers assess a site's suitability. This is somewhat similar to what DTE Energy is doing in Michigan through its Power Improvements Map, which provides limited information about project start date, end date, and completion status.²⁴ An expanded version of this tool for the City Light service area could share information on grid upgrade progress and proactively identify areas with existing capacity for prospective charging infrastructure providers, as this would benefit all non-residential City Light customers.

16 Jamie Housen, "City of Seattle Announces New Pilot Program to Incentivize Heavy Duty Truck Electrification," Office of the Mayor, August 16, 2023, <https://harrell.seattle.gov/2023/08/16/city-of-seattle-announces-new-pilot-program-to-incentivize-heavy-duty-truck-electrification/>.

17 "Electric Vehicles: Attend an EVolution Session," Oncor Electric Delivery Company, accessed on January 10, 2025, <https://publish-p25404-e97220.adobeacemcloud.com/content/oncorwww/us/en/home/smart-energy/electric-vehicles.html>.

18 Hernandez, Opening Comments of Voltera Power LLC.

19 Opening Comments of Terawatt Infrastructure, Inc on Assigned Commissioner's Scoping Memo and Ruling, Grant Snyder and Scott Dunbar, May 3, 2024, <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M531/K104/531104323.PDF>.

20 Bonelli, Opening Comments of Powering America.

21 Hernandez, Opening Comments of Voltera Power LLC.

22 Opening Comments on CALSTART, Inc on Staff Proposal for the High DER Proceeding, Alex Pfeifer-Rosenblum, May 28, 2024, <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M532/K262/532262611.PDF>.

23 Bonelli, Opening Comments of Powering America.

24 "Power Improvements Map," DTE Energy, accessed on January 3, 2024, <https://www.dteenergy.com/us/en/business/service-request/system-improvements/system-improvements/power-improvements-map.html>.

PROACTIVELY EXPANDING GRID CAPACITY

City Light's latest TESIP suggests that it is evaluating grid investments to support the development of new charging infrastructure. The ICCT suggested in its previous report that the utility consider proactive upstream grid capacity upgrades that address known grid constraints. As noted above, the ICCT report identified the southern section of City Light's service area as a likely hotspot for future ZE-MHDV charging needs due to freight and drayage activity, but substations and other grid infrastructure serving this area are approaching capacity and may be unable to serve concentrated charging loads. Indicating to customers where and when grid capacity is available could help the utility attract new load, particularly new load due to the upcoming financial incentives for vehicle and charging infrastructure purchases.²⁵ Early ZE-MHDV charging projects in California suggest that prolonged electrification timelines could cause electrifying fleets and charging infrastructure developers to locate their projects outside of City Light's service.

Fleets and CaaS providers voiced their preferred energization timelines in proceedings before the CPUC. They requested that energization occur within 125 business days on average for projects under 2 MW, which was adopted in the CPUC's recent Energization Timelines ruling (D. 24-09-020).²⁶ Even for projects that do require grid upgrades, CaaS providers are reluctant to wait beyond 18-24 months due to their freight customers' contract timelines.²⁷ They also want site capacity to be scalable if they expect increased energy demand from ZE-MHDV charging in future years. However, the CPUC did not mandate that upstream grid upgrades occur faster than the status quo: it allows new circuits to take up to 469 business days, substation upgrades to take up to 700 business days, and new substations to take up to 2,223 business days.²⁸ It remains to be seen how this ruling will affect electrifying fleets and new charging infrastructure projects in California, but fleets and developers in Seattle will likely have expedited energization preferences for City Light and request that the utility meet their timelines.

There are growing efforts nationwide to allow utilities to engage in proactive planning for future charging infrastructure projects. In August 2024, the New York Department of Public Service (DPS) opened its Proactive Planning proceeding to devise a planning framework that will enable utilities to identify grid infrastructure needs and develop grid upgrades in a cost-effective, timely manner.²⁹ The proposed framework submitted by the Joint Utilities of New York recognizes the state policies driving transportation electrification and the high costs to customers from energization delays of needed grid infrastructure.³⁰ The proposed framework can serve as a model for City Light as it puts emphasis on coordinating with other utilities to identify the best data sources, determine methodologies, and align assumptions to inform granular load studies

25 CALSTART, Washington State Medium- and Heavy-Duty Zero-Emission Vehicle and Infrastructure Incentive Program Design Strategy (2024), https://leg.wa.gov/media/5q1fxd04/final_wamhdvvoucherincentivereport021524.pdf.

26 Reply Comments of Powering America's Commercial Transportation on Order Instituting Rulemaking to Establish Energization Timelines, David Bonelli, March 1, 2024, <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M526/K553/526553989.PDF>; California Public Utilities Commission, Decision establishing target energization time periods.

27 Hernandez, Opening Comments of Volterra Power LLC.

28 California Public Utilities Commission, Decision establishing target energization time periods.

29 Order Establishing Proactive Planning Proceeding, 24-E-0364, State of New York Public Service Commission (August 15, 2024), <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={80465791-0000-C51E-B4A0-7B56E347E0F5}>.

30 Joint Utilities of New York, *Joint Utilities' Long-Term Proactive Planning Framework* (2024), <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={60C3C193-0000-C42C-9162-2B10D1624579}>.

used in load forecasting. The Joint Utilities mention methods and tools developed by the ICCT, Electric Power Research Institute, and Rocky Mountain Institute as examples of what could be incorporated into granular load studies. The New York Proactive Planning proceeding and the proceedings likely to follow in other states will further communicate potential planning best practices. City Light staff may consider evaluating options for proactive investments with the support of the City Council.

To address insufficient grid capacity in the near term, City Light could consider implementing the solutions listed in Table 3, all of which would enable energizing charging infrastructure while grid upgrades are underway. Recognizing that transportation electrification occurs in phases, the Electric Power Research Institute suggested interim service solutions in a recent paper.³¹ For example, City Light could support customer adoption of distributed generation and energy storage technologies, which could serve as temporary solutions to power chargers. These can be configured so they are not connected to the grid and can lower the charging site’s maximum load to under the distribution system’s capacity limits; this could allow the charging facility to be energized early while grid upgrades are underway.

Table 3
Interim and permanent solutions to enable charging site energization

Action by the customer	
Solution	Description
Accessing available capacity	There may be capacity on customer switchgear and electrical equipment that can enable limited charging capabilities in the near term.
Load management	To stay within capacity limitations, charging management systems can adjust charger power output based on the time of day or real-time grid conditions.
On-site generation	On-site generation such as solar panels or generators can help supply power for charging and reduce demand on the grid.
Energy storage	Energy storage can cover some of a site’s energy needs and is ideally programmed to charge during off-peak periods. These can be configured so they are not connected to the electrical grid.
Action by the utility	
Solution	Description
Allow customer-supplied equipment	Customers could be allowed to supply and connect their own equipment, like transformers, to avoid potential equipment delays from the electric utility.
Feeder load balancing	Shifting loads temporarily or permanently to nearby feeders could open capacity on the feeder serving a charging site and avoid overloading a section of the distribution network while grid capacity improvements are performed.
Construction service delivery	Temporary construction service can be provided in 1-3 months and would allow a charging site to operate at limited capacity while permanent service is in development.
Mobile substations and temporary transformers	Mobile substations and transformers can be temporarily deployed to ensure priority customers can energize their facilities on time.
Dynamic line rating	Dynamic line-rating systems enable real-time adjustments of transmission carrying capacity and potentially defer the need for infrastructure investments.

31. Liz Hunt, *Interim Service Solutions and Timely Grid Connections for Large Transportation Electrification Projects* (Electric Power Research Institute, 2024), <https://www.epri.com/research/products/000000003002030647&ved=2ahUKEwj1sLez9qKAxV7EVkFHB0wN9IQFnoECBUQAQ&usg=AOvVaw3m1W1PdDw4sHoxYaZ3IPbn>.

PROVIDING INCENTIVES AND PROGRAMS THAT COVER SOME OF THE COSTS

Once City Light has determined how to make the energization process more efficient and convenient for customers, it could then explore implementing new incentives and programs, particularly for smaller fleets and designated customers. Stakeholders reported that the most useful incentives reduce the upfront cost of ZE-MHDVs and are designed based on the purchasing behavior of different types of fleets. Some utilities, such as ComEd, are providing upfront purchase incentives for vehicles.³²

CaaS providers shared that they are reluctant to invest in sites where they will be solely responsible for upstream grid upgrades. Such upgrades can delay projects, significantly increase the cost of a charging facility, and compromise the provider's ability to offer competitive rates to fleet customers. Therefore, incentives from the utility that reduce upstream grid upgrade costs to the charging provider or fleet could incentivize private investment but will likely need to be balanced with mitigating negative ratepayer impacts. An expanded make-ready program that includes front-of-the-meter infrastructure up to or including the distribution substation is one option for City Light to consider.

Another option is to change to the distribution line extension policy. Since 2019, Xcel Energy's distribution line extension policy has designated charging providers as permanent service applicants, and this makes them eligible for an upfront construction allowance that reduces their service upgrade costs.³³ In California, ratepayers cover the costs of service line extensions and distribution infrastructure for separately metered or sub-metered EV charging facilities.³⁴

Make-ready incentives from the utility can reduce infrastructure costs and improve project economics for fleets and charging infrastructure providers. Puget Sound Energy (PSE) offers PSE-owned ready-to-operate services or a customer-owned option that provides incentives for Level 2 and DC fast chargers and covers most utility infrastructure and facility upgrade costs up to \$250,000 per charging location.³⁵ Make-ready programs specifically designed for ZE-MHDVs are being implemented in California and New York. Compared with passenger vehicles, electric trucks use more expensive charging infrastructure, so ZE-MHDV make-ready programs usually provide larger charger incentives, cover more expensive infrastructure on both the utility side and customer side, and may come packaged with different ZE-MHDV rates.

The design of these programs greatly influences customer participation. For example, ConEd explained that under its PowerReady MHDV Pilot Program, only certain customers are eligible to participate, and the highest incentives are only available to customers developing charging facilities in disadvantaged communities or those

32 ComEd, "ComEd Announces New EV Rebates for Business and Public Sector Customers; Applications to Open February 15," press release, February 8, 2024, <https://www.comed.com/news/news-releases/2024-02-08>.

33 Colorado Public Utilities Commission, *Public Service Company of Colorado Electric Tariff Index* (2023), https://www.xcelenergy.com/staticfiles/xe-responsive/Company/Rates%20%20Regulations/Regulatory%20Filings/PSCo_Electric_Entire_Tariff.pdf.

34 "Distribution Infrastructure and Planning," California Public Utilities Commission, accessed on April 11, 2025, <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/infrastructure/transportation-electrification/distribution-infrastructure-and-planning>.

35 "Up & Go Electric for Fleet: Prepare your Fleet for an Electric Future," Puget Sound Energy, accessed on January 10, 2025, <https://www.pse.com/en/pages/electric-cars/fleet-electrification>

developing publicly available charging.³⁶ ConEd shared that the program’s public accessibility requirement for the more generous incentives has affected commercial fleet participation because most charging infrastructure development is tailored for specific fleets or in shared depot facilities. With its make-ready incentives currently being revised, City Light could re-evaluate how it wants those incentives to benefit fleets and CaaS providers and which eligibility requirements should be in place.

Table 4 displays some other types of incentives available to City Light. Conversations with stakeholders about different incentive options might help the utility discern which ones could be the most effective, particularly for smaller fleets that might rely on financial incentives more than larger fleets and charging infrastructure developers. Factors such as incentive type, value, and eligibility restrictions can all affect customer participation. For example, ConEd’s 7-year DCFC Per-Plug Incentive Program, which was also enacted at the other major New York investor-owned utilities, offered an initial \$4,000 per plug per year incentive that gradually declined over time as the market matured.³⁷ All versions of this program closed early due to low participation and ConEd spent less than 1% of allocated funds. The utility speculated that the public accessibility requirement excluded many potential participants, and other eligible fleets and charging providers were not attracted by the incentive amount. This illustrates the importance of gauging market developments and customer preferences when developing incentives and programs. Utilities can explore the potential to adjust programs based on customer feedback to ensure the incentives are effective and create the market effects desired by the utility.

Table 4
Financial incentives to support private investment in charging infrastructure

Incentive	Description	Example
Utilization-linked financing	Financial incentives for charging station owners that decline over time as charging utilization rates improve	New York’s DCFC Per-Plug Incentive ^a
Charger installation performance incentive	Financial incentives that reward charging station developers for rapid installation	Orange & Rockland provides a Speed Bonus ^b
Utilization-based EV charging rate	Varying electricity rates for vehicle charging based on charging utilization rates	SMUD’s Commercial EV Pilot Rate ^c
Other EV charging rates	Electricity rates designed to ensure fuel savings and price predictability, such as through reduced demand charges	SDG&E’s Electric Vehicle-High Power Charging Pricing Plan ^d
On-bill financing	Low or no-interest loans are given to customers to acquire charging stations and are paid back on their energy bills	OPALCO’s Switch It Up program ^e

^a Joint Utilities of New York, “DCFC Per-Plug Incentive Program.”
^b “POWERREADY Electric Vehicle Program: Electric Vehicle Charging at Orange & Rockland,” Orange & Rockland Utilities, accessed on January 23, 2025, <https://www.oru.com/en/our-energy-future/electric-vehicles/new-york/commercial-ev-drivers/power-ready-program>.
^c Sacramento Municipal Utility District, *SMUD Commercial EV Pilot Rate* (2022), https://www.smud.org/-/media/Documents/Going-Green/EVs/0589-22_EV_PilotRateFAQs_Flyer.ashx.
^d “Fleet Friendly Charging Rates,” San Diego Gas & Electric, accessed on January 23, 2025, <https://www.sdge.com/business/electric-vehicles/power-your-drive-for-fleets/ev-hp>.
^e “Switch It Up! Which Projects Qualify?,” Orcas Power & Light Co-Op, accessed January 21, 2025, <https://www.opalco.com/save/the-island-way/switch-it-up/>.

36 “PowerReady Medium & Heavy-Duty Vehicle Program,” Consolidated Edison Company of New York, Inc., accessed on January 10, 2024, <https://www.coned.com/en/our-energy-future/electric-vehicles/medium-heavy-duty-ev-charging-infrastructure-program>.
37 Joint Utilities of New York, “DCFC Per-Plug Incentive Program.”

CONCLUSION

The City of Seattle and Seattle City Light have made supporting transportation electrification a core priority for the years ahead. Although still nascent, ZE-MHDVs have the potential to be a significant source of new load for City Light because fleets serving the Ports of Seattle and Tacoma are expected to electrify over the next 10–15 years.

This brief assessed existing strategic plans guiding City Light's approach to transportation electrification and summarized our conversations with industry actors nationwide and review of other utilities' program offerings. From this, three strategies emerged for City Light to consider to attract private investment:

1. Enhance customer experience by developing internal expertise to improve the efficiency and transparency of the energization process;
2. Proactively invest in expanding grid capacity, especially in areas where commercial fleets are expected to electrify, to enable timely connections for depots and charging hubs; and
3. Offer new incentives and support programs that are informed by customer preferences.

City Light can greatly influence the pace of transportation electrification in Seattle. The solutions above can help the utility attract private investors in charging infrastructure by strengthening its ability to meet the needs and timelines of electrifying fleets and charging infrastructure providers.



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