I. Introduction

The City and County of San Francisco (City) appreciates the opportunity to submit comments on the California Public Utilities Commission's (Commission) Concept Paper on transmission financing and ownership issued pursuant to Assembly Bill 3264, dated March 11, 2026. The City supports the Commission's examination of alternative financing and ownership structures for electric transmission infrastructure as a necessary and timely effort to address rising transmission costs borne by California ratepayers.

California faces unprecedented transmission investment needs, with CAISO-approved portfolios driving tens of billions of dollars in new infrastructure over the coming decades. Publicly available research, cited in response to the questions below, consistently shows that ownership structure, financing model, tax treatment, and development risk materially affect the total cost borne by ratepayers—often as much as, or more than, engineering scope.

The City has a longstanding interest in policies that reduce the long-term cost of essential electric infrastructure while maintaining reliability and supporting the State's clean energy and decarbonization goals. As discussed below, publicly financed and hybrid transmission models warrant serious consideration because they can materially reduce transmission revenue requirements—and therefore Transmission Access Charges ("TAC")—without compromising operational performance.

The Warnerville–Newark Transmission Expansion Project (WaNTEP), proposed by the City[1], is currently under consideration in the CAISO 2025-2026 Transmission Planning Process (TPP). WaNTEP will utilize existing right-of-way (RoW), minimizing permitting and environmental challenges and potentially reducing permitting complexity and development risk relative to many greenfield transmission projects discussed in the Concept Paper. WaNTEP provides a concrete California example of how alternative ownership and financing models—already documented in national and state-level studies—could be applied within the CAISO planning framework to reduce total transmission costs while meeting reliability and policy needs. Many of the concepts described below, in response to the Concept Paper questions, are applicable to projects such as WaNTEP in achieving statewide transmission cost savings.

[1] Board Approved CAISO 2024-2025 Transmission Plan dated May 30, 2025, pp., 11, 13 and 79.

II. Response to Concept Paper Questions

A. Transmission Ownership Structures

1. Are there publicly available studies that provide insights on overall cost savings attributable to different ownership or financing models?

Yes. Multiple publicly available studies conclude that public or public-sponsored ownership models reduce ratepayer costs relative to traditional investor-owned utility ("IOU") ownership, primarily through lower cost of capital and elimination of shareholder return requirements.

The California Public Advocates Office has estimated that substituting public financing for IOU financing can reduce lifecycle transmission costs by roughly **25 percent**, with savings driven mainly by the elimination of return on equity (ROE) and lower debt costs.[2] Similarly, the Center for Law, Energy & the Environment (CLEE) concludes that public financing and public-private partnership hybrid models—especially lease-type hybrids—can reduce the transmission revenue requirement by **tens of billions of dollars** over the life of California's projected transmission build-out.[3] CLEE's analysis shows that IOU-financed transmission can cost more than twice as much as comparable public or hybrid alternatives over a 40-year horizon, largely due to ROE and tax components embedded in IOU cost-of-service regulation.[4]

Also, as noted in the Concept Paper, there is an emerging opportunity for new transmission providers to develop lines primarily funded by "subscribers." The Subscriber Participating Transmission Owner (SPTO) model, initiated by CAISO, recovers costs of development via the contracts with generators that subscribe to the line. SPTO can play a major role in containing the ever-growing CAISO-side TAC charges. Bay Area Municipal Transmission Group (BAMx)'s analysis indicates that if all the transmission projects needed to access out-of-state wind envisioned in the ISO 20-year outlook were to elect the subscriber model, nearly $9.95 billion of transmission costs would not be recovered through the Regional TAC. As a result, the projected Regional TAC 15-20 years from now would reduce by as much as $7/MWh.[5] BAMx stated the transmission costs needed to deliver the power from the out-of-state or offshore wind transmission lines would instead be recovered from the parties electing to procure the output of those projects, thus enabling them to consider the full costs of those projects in comparison to others that don't require as much transmission investment.

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[2] CPUC Public Advocates Office, Public Investment in Infrastructure Is a Promising Option to Support California's Energy Transition and Reduce Ratepayer Costs (May 16, 2023).
[3] Center for Law, Energy & the Environment (CLEE), Improving Transmission Financing in California: Alternative Models and Policy Strategies to Increase Affordability (Oct. 2024).
[4] *Id.* at Executive Summary.
[5] CAISO Subscriber Participating TO Model, Revised Draft Final Proposal, May 15, 2023. P.7.

2. Is there evidence that competitively procured transmission projects yield savings relative to incumbent IOU development?

Yes. Both California experience and national studies demonstrate that competitive procurement of transmission projects can significantly reduce capital costs. Public sources provide evidence that competition can reduce transmission costs under certain conditions, though outcomes depend on enforceable cost controls and realistic project scopes.[6]

Brattle Group's analyses of the Federal Energy Regulatory Commission (FERC) Order No. 1000 experience show that competitively selected projects have, on average, bid substantially below initial utility cost estimates, while non-competitive projects frequently experience cost escalation.[7] At the same time, CAISO and others have emphasized that cost savings depend on credible cost caps and manageable siting risk.

The City notes that competitive procurement and alternative financing approaches are complementary tools. When combined, they can amplify ratepayer savings by reducing both the size of the rate base and the cost of capital applied to that rate base.

B. Potential Options for Achieving Transmission Cost Savings

3. Are there publicly available case studies of a government entity financing and building electric infrastructure at lower cost compared to a private entity? Are there publicly available data about the scope of the project and its costs?

Yes. There are both California-specific and out-of-state examples demonstrating the feasibility and cost advantages of public or hybrid financing structures.

In California, the **Citizens–Morongo** transmission ownership model approved by the FERC allowed a publicly affiliated entity to finance transmission using **100 percent debt**, significantly lowering financing costs relative to IOU capital structures. FERC also approved fixed long-term rates, enabling access to low-cost debt while maintaining operational reliability.[8]

Outside California, state transmission authorities such as **New Mexico's Renewable Energy Transmission Authority ("RETA")** and **Colorado's Electric Transmission Authority ("CETA")** have supported transmission development using public or hybrid

[6] See Clean Air Task Force, Wired for Savings: State Transmission Authorities (2025), located at https://cdn.catf.us/wp-content/uploads/2024/10/31145139/wired-for-savings.pdf
[7] Brattle Group, Competitive Transmission Planning Experience (2018). Brattle Group, Cost Savings Offered by Competition in Electric Transmission (2019).
[8] Morongo Transmission LLC, 174 FERC ¶ 61,194 (2021).

models that reduce borrowing costs, minimize tax exposure, and retain private-sector operational expertise.[9]

Public power entities in the United States have a long and well-documented record of financing transmission and other electric infrastructure at a lower cost than IOUs.

The American Public Power Association documents that public power utilities typically face significantly lower annual revenue requirements for comparable transmission assets due to tax-exempt financing, lower equity ratios, and the absence of income taxes.[10] Cal Advocates' illustrative comparison of a $200 million transmission project found approximately $184 million in lifecycle savings under public financing.[11] The City estimates that, on a Net Present Value ("NPV") basis, the publicly financed option can yield savings of 40% of the initial capital cost over a 30-year period. Given that the capital cost of competitively procured transmission projects under development in CAISO totals approximately $10 billion, public financing could yield NPV savings of $4 billion for CAISO transmission ratepayers.

These examples demonstrate that public participation in transmission financing and ownership can reduce costs without compromising system performance.

4. Are there publicly available case studies of a government entity financing an infrastructure project with the participation of private equity or other private sector financing, with public?

Financing structure is a primary driver of the transmission revenue requirement and, by extension, the TAC.

Under traditional IOU financing, the transmission revenue requirement includes:

- A return on equity (often approximately 10 percent),
- State and local property taxes, and federal and state income taxes assessed on that return, and
- Capital structures that rely heavily on equity rather than lower-cost debt.[12]

Publicly financed transmission can materially reduce each of these components. Debt-heavy or fully debt-financed structures replace high-cost equity with lower-cost borrowing. Public ownership eliminates or substantially reduces federal and state income

[9] CLEE, Improving Transmission Financing in California, Appendix I.
[10] American Public Power Association, Municipal Bonds and Public Power located at https://www.publicpower.org/policy/municipal-bonds-and-public-power
[11] CPUC Public Advocates Office, Public Investment in Infrastructure Is a Promising Option to Support California's Energy Transition and Reduce Ratepayer Costs (May 16, 2023), pp.3-4.
[12] See CPUC, Electric Transmission Rates and FERC Proceedings, available at https://www.cpuc.ca.gov.

tax obligations. The resulting reduction in the revenue requirement flows directly through to lower TAC charges paid by load-serving entities and customers.[13]

Public-private partnership models have been used in infrastructure sectors where public sponsorship reduces financing costs while private participation allocates construction or operational risk. While less common in transmission, the principle is well established: public participation lowers the overall cost of capital, even when private capital is involved. CLEE finds that such hybrid structures can lower overall financing costs when public entities retain ownership or provide credit support, while private partners assume construction or operational roles. The key cost savings arise not from private equity itself, but from the public sponsor's balance sheet, taxing authority, and risk profile, which reduce financing costs for the entire project.

5. **At what scale have certain financing solutions been used? What are the constraints, opportunities, risks, and/or tradeoffs of scaling up other kinds of financing?**

Public and hybrid transmission financing models have been deployed at a multi-billion-dollar scale, including statewide and regional portfolios. Constraints are largely institutional rather than technical, including statutory authority, alignment with regional planning, and cost-recovery mechanisms.

The principal tradeoffs involve governance and risk allocation, not feasibility. These risks are manageable and, in many cases, lower than those associated with greenfield, privately financed projects that face permitting uncertainty and cost escalation. Therefore, it is critical that the CAISO considers the above features.

6. **How does tax liability for government entities differ from that of investor-owned utilities?**

Government entities generally do not pay property taxes or income taxes and can issue tax-exempt debt, which materially lowers their cost of capital compared to investor-owned utilities. IOUs must recover tax liabilities and shareholder returns through rates, increasing the revenue requirement passed on to ratepayers. These structural advantages are permanent and compound over the life of the asset.

7. **Are there publicly available examples of electric infrastructure project costs reduced because of any of: permitting exemptions or streamlining, meeting/beating timelines, or incentive/penalty structures for the project lead?**

[13] CLEE, Improving Transmission Financing in California, Section 3.

Yes. Publicly available evidence indicates that permitting streamlining, schedule certainty, and incentive or penalty mechanisms can reduce electric infrastructure project costs by lowering development risk, shortening construction timelines, and reducing financing and carrying costs. Department of Energy[14] and Brattle[15] analyses show that permitting delays and development risk materially increase transmission costs, primarily through financing carry costs and inflation exposure. Projects that utilize existing corridors or avoid complex siting processes experience lower total costs.

CLEE similarly concludes that reducing development timelines can yield cost savings comparable to financing reforms.[16]

Permitting Streamlining and Exemptions.

Federal and state analyses consistently find that prolonged permitting timelines materially increase transmission project costs by extending development periods and increasing financing, labor, and materials exposure. A Congressional Research Service report on electricity transmission permitting notes that multi-jurisdictional siting and sequential environmental reviews can add years to project development timelines, increasing total project costs and discouraging investment.[17]

Public power and federal policy analyses further conclude that coordinated and concurrent permitting—particularly through streamlined National Environmental Policy Act (NEPA) reviews and categorical exclusions for low-impact upgrades—can reduce development timelines and associated carrying costs.[18] While these sources do not attribute savings to individual projects on a line-item basis, they explicitly identify shortened permitting timelines as a mechanism for reducing overall infrastructure costs by reducing financing risk and construction delay exposure.

At the federal level, the FAST-41 permitting framework is designed to improve cost outcomes by increasing predictability and accountability in permitting schedules for large infrastructure projects, including transmission. The federal Permitting Dashboard publicly tracks milestones and timelines to reduce delay-related cost escalation.[19]

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[14] Department of Energy, Transmission Impact Assessment Power Sector Infrastructure Deployment to Reduce Costs, Improve Reliability, and Lower Pollution, October 2024.
[15] Brattle Group, Competitive Transmission Planning Experience (2018). Brattle Group, Cost Savings Offered by Competition in Electric Transmission (2019).
[16] Center for Law, Energy & the Environment (CLEE), Improving Transmission Financing in California: Alternative Models and Policy Strategies to Increase Affordability (Oct. 2024).
[17] Congressional Research Service, Electricity Transmission Permitting Reform: Issues and Legislative Proposals, R47627 (Nov. 19, 2025).
[18] American Public Power Association, Streamlining Energy Infrastructure Permitting (June 2024); Bipartisan Policy Center, Linear Infrastructure: Options for Efficient Permitting of Transmission and Pipeline Infrastructure (July 2023).
[19] Federal Permitting Improvement Steering Council, Permitting Dashboard, https://www.permits.performance.gov.

Meeting or Beating Project Timelines Through Competitive Procurement.

There is stronger project-specific evidence that cost containment and schedule guarantees—commonly used in competitively procured transmission projects—reduce ratepayer exposure to overruns.

Publicly available summaries of competitively bid transmission projects approved under FERC Order No. 1000 show that winning bids frequently include binding schedule guarantees and cost-containment commitments, shifting delay and overrun risk from ratepayers to project developers.[20] These projects demonstrate materially lower bid costs relative to non-competitive benchmarks, with cost-containment provisions explicitly identified as a driver of ratepayer savings.

While these examples primarily reflect procurement discipline rather than permitting reform alone, they illustrate how enforceable schedule commitments can materially reduce total project costs and ratepayer risk.

Incentive and Penalty Structures Affecting Project Costs.

FERC policies provide additional publicly documented examples where incentive structures are explicitly designed to reduce project costs.

Under FERC Order No. 679, transmission developers may receive incentive rate treatments only where there is a demonstrated nexus between the incentive and reduced project risk or improved project performance. One such incentive—Construction Work in Progress (CWIP) in rate base—has been found to reduce customer costs by lowering financing costs during construction and improving cash flow stability. Public analyses estimate that CWIP treatment can reduce customer costs by approximately 9 to 11 percent over the life of a project relative to traditional ratemaking.[21]

Conversely, competitive solicitations frequently include penalty provisions for cost overruns or schedule delays, which public reports identify as a key mechanism for cost discipline.[22] These provisions reduce ratepayer exposure by assigning performance risk to the project sponsor rather than customers.

8. How does exposure to liability and other risk affect public utilities' willingness to own transmission?

[20] Electricity Transmission Competition Coalition, Examples of Ratepayer Cost Savings and Benefits of Transmission Projects that Were Competitively Bid (Dec. 4, 2025).
[21] FERC, Order No. 679; WIRES Group, The Construction Work in Progress Incentive Lowers Costs (June 2025).
[22] Electricity Transmission Competition Coalition, Examples of Ratepayer Cost Savings and Benefits of Transmission Projects that Were Competitively Bid (Dec. 4, 2025), supra note 4.

As CLEE notes, public entities prefer projects with predictable scope, permitting pathways, and cost recovery, rather than speculative greenfield developments.[23] Public utilities are generally cautious about assuming transmission ownership where risks are open-ended or poorly defined. However, where risks are bounded, well understood, and aligned with public benefit, public entities are willing and capable owners. This risk profile explains why public ownership models are often paired with existing rights-of-way, phased development, or lease-type hybrid delivery structures that allocate operational risk without sacrificing financing advantages. The risk allocation consideration for hybrid structures related to potential wildfire risk and liability associated with transmission assets is valid. Potential mitigation measures could include statewide risk pooling, similar to measures taken to protect investor-owned utilities.

9. Please comment on feasibility of either of these models for California. Please specify barriers and the structural elements that would have to exist for the model to develop transmission at lower costs.

General Feasibility in the California Context

The two alternative ownership models identified in the Concept Paper—PPP Build-Operate-Transfer (PPP-BOT) and Lease-type PPP—are theoretically feasible in California, but neither model is currently "plug-and-play" under existing statutory, regulatory, and CAISO market structures. As the Concept Paper correctly notes, California's transmission system has historically relied on investor-owned utilities (IOUs) earning a FERC-authorized return on equity, resulting in comparatively high financing costs borne by ratepayers. Public-private partnership models could, if properly structured, combine lower-cost public capital with private sector execution expertise, thereby reducing total revenue requirements for transmission projects selected in the CAISO Transmission Planning Process (TPP).

However, feasibility depends less on engineering capability and more on whether California can resolve three structural tensions: (1) interaction with CAISO's competitive solicitation framework, (2) allocation of construction, operational, and wildfire liability risk, and (3) compatibility with tax-exempt or otherwise lower-cost public financing.

PPP-BOT vs. Lease-Type PPP

Among the two alternatives, the lease-type PPP appears more readily implementable in California. Under this model, a public entity retains ownership of the transmission asset and leases operations and maintenance to a private operator. This structure preserves public financing advantages while leveraging private operational expertise. By contrast, the

[23] Center for Law, Energy & the Environment (CLEE), Improving Transmission Financing in California: Alternative Models and Policy Strategies to Increase Affordability (Oct. 2024).

PPP-BOT model presents greater structural challenges in its interaction with the CAISO competitive solicitation process. The CAISO TPP currently awards projects to developers, not financing consortia. A PPP-BOT model would require either advance disclosure that public capital is available to all bidders, or post-award restructuring—both of which may weaken competitive incentives. Lease-type PPPs, by contrast, could be more readily accommodated as a permissible ownership structure for CAISO-approved reliability projects without altering the existing solicitation framework.

Under this approach, the City, as a public entity, could:

1. Retain public ownership of the transmission asset, enabling access to lower-cost public financing and avoiding long-term equity returns to private shareholders.
2. Issue an RFP to private developers to design, build, and/or operate the project under either:
    a. a defined BOT concession with a scheduled transfer of ownership, or
    b. a long-term lease and operations agreement.

Such an RFP would remain fully consistent with CAISO's role in identifying system needs and approving transmission solutions, while allowing a public sponsor to explore ownership and financing structures aimed at reducing the total costs ultimately borne by CAISO TAC payers.

III. Concluding Remarks

The public record demonstrates that ownership and financing structure materially affect transmission costs to ratepayers. Public and hybrid models—supported by lower-cost capital, favorable tax treatment, and reduced development risk—can deliver comparable or superior grid outcomes at lower total cost. The projects like WaNTEP could provide a California-specific example of how these advantages can be operationalized within CAISO's transmission planning process.

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