

Evaluating the impacts from reducing equity in investor-owned utility capital stacks in California

California is currently debating AB 825, a bill which would, amongst other policies, enable public financing and ownership of eligible transmission projects.¹ In particular, the bill envisions public finance could flow to either publicly-owned projects, or to investor-owned utility (IOU) projects by replacing equity in their capital stacks. In response, IOUs raised concerns opposing the bill's utilization of public financing.

The IOU argument can be broadly summarized as follows: AB 825's mechanisms to reduce equity in the capital stack, and the grid fragmentation from new transmission owners, would undermine investor confidence in California IOUs, resulting in higher costs of capital passed on to consumers for future projects. While we were unable to source specific estimates or a more in-depth qualitative analysis in publicly available IOU materials, the following explanations of the IOU argument can be intuited:²

- IOUs anticipate a decrease in the price/earnings ratio for their equity due to the decrease in the allowable rate of return on projects with more debt in their capital stack.
- IOUs worry the above would impact their credit rating on new debt, thereby raising costs for consumers above the savings incurred from public finance.

In this research note, Center for Public Enterprise (CPE) finds public financing of transmission will not have a negative impact on ratepayer savings because replacing equity with debt is unlikely to result in investor-owned utility credit rating downgrades. Indeed, public financing is likely to preserve IOU rate-basing capability for future projects by giving utilities the room to pursue other necessary, higher risk investments.

Section I summarizes IOU concerns about the financial impact of public transmission financing. Section II evaluates these claims through a review of the empirical literature and the author's own analysis of transmission financing costs under three scenarios. Section III provides concluding remarks and the broader context in which policymakers must evaluate specific IOU concerns.

¹ [Bill Text: CA AB 825](#). At the time of publication, the bill text is still subject to further modification.

² For example, a [letter](#) from San Diego Gas and Power summarized in an analysis presented to the California State Senate Energy, Communications and Utilities Commission February 11, 2025.

I: Summary of AB 825 and investor-owned utility concerns with the public financing

AB 825 creates a Public Transmission Financing Program through the California I-Bank to lend low-cost public debt to eligible transmission projects with a “public transmission sponsor” that has an ownership stake in the project. Such sponsors include state agencies, local government entities, tribal organizations, or joint powers authorities. Recent analysis identifies the potential for large consumer savings to the extent public debt can reduce equity in the transmission financing capital stack, where IOUs typically finance transmission projects with a roughly 50% equity contribution.³

IOUs have opposed AB 825, citing concerns regarding public financing may impact their business model. Specifically, IOUs are likely concerned that a facility that replaces equity with debt will reduce their total rate base and limit their choices for the project’s capital structure or their overall portfolio. More funds needed for debt service mean larger cash commitments to debt investors⁴, but also a lower revenue requirement out of which to service debt, reducing earnings for investors. IOUs have indicated these arrangements will lower their credit ratings by driving up their debt-to-equity ratio⁵ and reducing the income out of which they would service the debt. The implication of IOU arguments is that a higher debt-to-equity and lower revenue requirements would result in credit downgrades of IOU instruments and higher borrowing costs, all of which would outweigh the cost savings from AB 825’s displacement of equity.

II: Evaluating the potential for IOU cost of capital increases and whether this could outweigh consumer savings from AB 825

In this section, **we find public finance will not have a negative impact on consumer savings because replacing equity with debt is unlikely to result in IOU credit rating downgrades.** As long as utilities can secure cashflows to meet what cash commitments they do have, the use of public finance is unlikely to overwhelm savings to rate payers from a reduction in an IOU’s use of equity and its replacement with low cost debt. Moreover, utility regulated equity returns are high enough that any replacement of equity with lower-cost public financing is a net benefit to rate payers.⁶ To illustrate our claims, we review the existing empirical literature and provide a generalized model of utility revenue requirements.

³ Net-Zero California and Clean Air Task Force, [Wired for Savings: Evaluating the impact of alternative transmission financing and development models on California ratepayers](#). November 2024.

⁴ Equity returns, while high, are only paid out of available profits.

⁵ The proportion of debt in capital stacks or investment portfolios.

⁶ Marc Ellis, [“Rate of Return Equals Cost of Capital: A Simple, Fair Formula to Stop Investor-Owned Utilities From Overcharging the Public”](#) *American Economic Liberties Project*, January 17, 2025.

The cost of equity is not a transparent measure since, unlike debt, there is not a market benchmark for equity costs and returns. Utility commissions must thus make extrapolations from models and testimony on assigning how much of a premium must be assigned to regulated returns on equity over debt. Ever since Paul Joskow's seminal 1972 study of utility regulated return decisions, it has been well understood that a variety of subjective factors influence decisions on rates returns.⁷ Since Joskow's original paper, utility commissions have attempted to improve their rate making by introducing more formal models of the cost of equity such as the capital asset pricing model (CAPM). However, the introduction of more modern benchmark models to rate cases has not removed subjective factors from rate making. Instead, studies using CAPM benchmarked equity pricing have consistently found utility commissions give regulated utilities higher rates of return than a CAPM model would predict.⁸

A 2025 RMI report shows that utility sector returns on equity are high enough that any increased cost to rate payers from a fall in credit rating due to falling regulated returns would be dwarfed by savings from lower equity rates of return. In other words, high regulated returns on equity have a disproportionate effect on rate payer bills.⁹ Another significant finding presented in a 2025 working paper by Dunkle and Werner argues that high returns on equity are the driver for utility investment bias (the infamous Averch-Johnson effect¹⁰) but that this effect is more pronounced on distribution investment than it is for generation or transmission.¹¹

While there is already a strong literature indicating that utility equity returns are higher than necessary, providing ample room for savings to accrue from debt financing, we conducted our own analysis of potential impacts on revenue requirements from a higher debt load and public financing of transmission. We constructed a generalized revenue requirement model examining the impacts on the IOU rate base using several financing scenarios. Each assumes a \$1 billion transmission project with a lifetime of 50 years. The three scenarios tested are as follows:

⁷ Paul L. Joskow, "The Determination of the Allowed Rate of Return in a Formal Regulatory Hearing," *The Bell Journal of Economics and Management Science* 3, no. 2 (1972): 632-44.

⁸ For example see Shlomit Talley, Eric L. Azgad-Tromerand, "The Utility of Finance," June 28, 2017; David C. Roade and Paul S. Fishback, "[Regulated Equity Returns: A Puzzle](#)" *Energy Policy* Vol. 133, October 2019; Daniel et. al, 2025; Karl Dunkle Werner and Stephen Jarvis, "[Rate of Return Regulation Revisited](#)" *Berkley Haas Energy Institute Working Paper no. 329R*, March 2025.

⁹ Joe Daniel, Ryan Foelske, Steve Kihm, "[Rebalancing "Return on Equity"](#)" to Accelerate an Affordable Clean Energy Future" *RMI Research Commentary No. 805*, February 11, 2025. A similar discussion can be found in Ellis, 2025.

¹⁰ The hypothesis that regulated firms are incentivized to over invest in capital assets in order to expand the volume of their profits resulting in higher than necessary costs to rate payers.

¹¹ Werner and Jarvis 2025, 30-36.

- **Baseline IOU scenario.** A project by an IOU with a cost of debt at 7.5 percent and a cost of equity at 12 percent. The debt-to-equity ratio is 50 percent.
- **Public option scenario.** A wholly public project financed entirely out of a public bond issuance with a rate of 5 percent.¹²
- **Securitization scenario.** A project that is fully financed through a securitized debt issuance by an IOU at 7.5 percent cost of debt.

The results of three scenarios are summarized in table 1 below:

Table 1: Scenario Results

Scenario	Cost of equity	Cost of debt	LTV	Rate of return	Revenue requirement
Baseline IOU	12%	7.50%	50%	9.75%	\$6,014,504,696
Public Option	N/A	5%	100%	5%	\$4,066,588,029
Securitization	N/A	7.50%	100%	7.50%	\$4,754,088,029

Notice that both the Public Option and Securitization scenarios see significant savings relative to a baseline IOU project. This is because both displace equity in the project using debt and reap tax savings and secure a lower required rate of return.

Following the creation of these scenarios, we tested how much the cost of debt would have to rise in the Public Option and Securitization scenarios to offset the achieved savings on future projects of similar size. In both cases, the cost of debt would have to rise above the cost of equity before the savings ultimately disappeared: to 12.65 to 12.95 percent.¹³ Notice that the debt rate must rise above the equity rate due to the tax-advantages accruing to the utility from taxes on equity earnings. **Such an increase in the cost of debt is extremely unlikely from a single credit rating increase, let alone from credit rating increases specifically due to increasing project D/E ratios or reducing equity risk premiums (i.e. how much extra they receive via returns on equity relative to what could be achieved at minimum on financial markets).** The July 2025 monthly average spread between the yield on AAA and BBB rated debt of over 20 years was 5.5 to 6.10. In a numerical example presented by Mark Elis using 2022 metrics from the rating firm Moody’s, a utility company funded fifty-fifty by equity and debt would need a decrease of 40% on its regulated return on equity to be downgraded one notch from an A rating to a Baa rating resulting in the cost of debt increasing by 2

¹² These would not be general obligation bonds under AB 825.

¹³ The range accounts for differences in the cost of construction debt in the two scenarios. In both scenarios, construction debt costs the same as term debt.

basis points from 5 to 5.2% This would result in a 28% decrease in customer costs, even considering the higher rate of return.¹⁴

Finally, we are skeptical that any changes brought by public transmission financing will actually have significant impacts on utility costs of capital in the first place. **IOU credit ratings are primarily determined by the availability of cashflow from operations to pay down financing commitments.** In other words, the amount of money IOUs bring in relative to their debt servicing commitments helps determine how credit rating agencies will evaluate future debt issuance by an IOU.¹⁵ IOUs have not presented precise numbers on the impact of AB 825 on their equity returns but they would have to be very large given the small number of projects that they represent relative to the total rate base. Regulators can also set a sufficient revenue requirement to ensure the IOU has an adequate cash buffer to cover debt servicing. Moreover, operational cashflows are unlikely to change substantially from the loss of public financing of newly eligible projects under AB 825. **The limited number of projects directly eligible for AB 825 financing curtails the potential downside for utility cashflows going forward.**¹⁶

There are other considerations that stakeholders account for regarding the arguments presented by the IOUs. Evidence suggests higher debt-to-equity ratios do not impact the ability of IOUs to raise capital in future. US firms have consistently been able to issue bonds despite credit downgrades with the cost of capital being as influenced by macro-economic conditions as credit ratings. Since 2000, bonds with BBB and below credit ratings have been consistently able to access capital markets with high yield bonds (rated BBB and lower) averaging around 60% of the value of new issuance.

Evidence suggests IOUs have considerable scope to lower the returns on equity they have been delivering without significantly affecting their ability to issue new equity. A discounted cash flow model assumes that a company should be able to issue new equity without diluting shareholders at a price to book value of greater than 1. The yearly average IOU book to market ratio in January 2025 was 1.85¹⁷ with PG&E's yearly average for 2024 at 1.44 and Southern California Edison's at 1.59.¹⁸ Historically, we know that firms have been able to issue new equity and maintain strong shareholder interest

¹⁴ Elis, 2025, 20-22.

¹⁵ Marc Ellis, "[Rate of Return Equals Cost of Capital: A Simple, Fair Formula to Stop Investor-Owned Utilities From Overcharging the Public](#)" American Economic Liberties Project, January 17, 2025.

¹⁶ If AB 825 public developers can only bid on projects in CAISO's open bidding queue. AB 825 asks the PUC to include processes wherein developers must examine options for partnering with public entities to develop transmission outside of the open bidding process, but makes no obligations for them to make commitments.

¹⁷ Based on an [index](#) created by Aswath Damodaran.

¹⁸ Author calculations based on macro trends data.

even at PB ratios lower than one, though this depends on macro-economic factors. Evidence also suggests IOU risk premiums have increased over time.¹⁹

Even if we accept that the cost of financing new debt might go up due to changes in debt to equity ratios, there is scant evidence that these changes greatly increase rate payer costs relative to the rate payer funds saved by using less IOU equity in financing. Moreover, as shown above, the difference in cost between equity and debt means the IOU would have to see a severe increase in the cost of debt to nullify the savings from increasing its debt-to-equity ratio. Such dramatic increases in the cost of debt are unlikely to occur unless the IOU has pre-existing financial obligations that it cannot service, not because it lost out on new projects or successfully financed approved projects with debt. Pre-existing financial difficulties are a matter between IOUs and rate commissions, but not something that should discourage policymakers from pursuing the benefits to rate payers from public financing.

Finally, it is unclear if debt issued by the AB 825 would result in any increase in a IOUs debt-to-equity ratio. Under our reading of the bill, public owners will be limited to either bidding into CAISO's competitive bidding docket — projects in which IOUs already compete with other developers or in which they often do not participate — or have to partner with IOUs to finance projects that the latter have exclusive rights to undertake. In this latter scenario, we have no reason to believe that any debt from the AB 825 loan program would recourse to the IOU rather than the public owner. Projects structured as special purpose vehicles could have their costs recovered in rates, impacting IOU balance sheets only to the extent they directly participate in project financing. The use of special purpose vehicles is already intended to separate specific projects from the balance sheet of the investing IOU. This likely arrangement would further mitigate any blowback onto IOU credit ratings from carrying AB 825 public debt.

III: Concluding remarks for policymakers

This analysis finds that the measures proposed in AB 825 would have little effect on the financial positions of IOUs, and any such impact would be small enough that it would not come close to outweighing ratepayer savings from public financing.

¹⁹ Lin, Albert. "[Electricity Bills Too High? Then, Get the ROE in Line.](#)"

The goal of IOU regulation is to protect customers from the pricing power of a natural monopoly via an administered price and balance those concerns with the need to encourage private companies to continue to make investments into infrastructure. This does not mean that the government's responsibility is to make sure that the utility makes a high rate of return for stock holders. However, it is the government's responsibility to ensure that ratepayers are not asked to foot the bill for equity returns if they are not ultimately necessary to finance the costs of a specific set of projects.

Passing on savings from public financing is also in the long-term interest of utilities. Reducing consumer costs by lowering the utility rate of return reinforces what makes utilities such credible borrowers – the ability to rate base. The latter is threatened by backlash associated with higher costs. There are growing examples of utility commissions becoming reluctant to approve ratebased investments in large-scale fixed capital projects due to the growing costs of previous investments and other utility owned assets. Further pressures on electricity costs are imminent due to expected load growth from data center expansion and commercial electrification. Rate-basing for the capital expenditures to meet these needs is important, but must be used judiciously.²⁰ **Persistent negative relationships between IOUs and their customers are far more dangerous to the credit ratings of IOUs than increasing the debt share of financing, or even a marginal loss to the rate base because they threaten the core of what makes utilities advantageous issuers of debt and equity: its ability to respond to new investment or exigent financial circumstances using rates.**

AB 825 proposes to lower financing costs on a subset of projects already recognized as necessary. This gives room for IOUs to rate-base for future resiliency, grid, or resource investments with less utility commission and public pushback. Indeed, Moody's 2022 guidance suggests that 15% of IOU credit ratings are based on the stability and predictability of the regulatory regime and note that political risk is a factor in its assessment.²¹ Therefore, usage of higher ROEs on projects that can otherwise proceed using cheaper public finance with lower revenue requirements may well degrade IOU's ability to rate-base in the future. Preserving that capability is vital to continued investment in California's grid infrastructure.

One concern that utilities may have is that of “perception risk:” the fear that creating pathways for non-IOU projects would increase fears that IOUs cannot meet their

²⁰ Some examples of price increases disrupting IOU investment plans include overruns on transmission and distribution or on the Vogtle Nuclear Facility.

²¹ Moody's. Rating Methodology: [Regulated Electric and Gas Networks](#).

commitments. However, the opposite is just as likely. Facilitating pathways for multiple parties to build out infrastructure at lower cost can derisk infrastructure investment in transmission more generally: this is known as a “demonstration effect.”²²

We believe that there is a constructive dialog to be had about how to use AB 825 to create partnerships between public entities and utilities. Public investment offers a chance for IOUs to both partner with the state on important infrastructure and identify higher priority projects on which to use their rate-basing capacity rather than counting on consumers to support higher rates on projects that do not need them to secure investment.²³ Such partnerships are likely to seed demand for suppliers and contractors. The state’s involvement in capital stacks will mean IOUs can make the argument for rate increases on other, riskier investments (perhaps ones the public sector or CAISO have not yet committed to). Finally, additional non-IOU transmission capacity in California will also ease congestion and strains on the overall grid, limiting blowback and costs to utilities themselves. There are likely to be many other potential benefits and opportunities for IOUs to partner with the public sector in energy infrastructure development. For instance, there are precedents in tax equity partnerships for renewables that allow a IOU to rate base its equity investments in a partnership in order to pass on rewards created by public policy decisions to customers.²⁴ These are beyond the scope of AB 825 but could be considered in future policymaking.

²² The demonstration effect is a long-standing feature of the literature on infrastructure and clean technology financing. For more information, see: [Risk Control Mobilist. Innovative Deals in Development Finance: Originate to Demonstrate \(O2D\)](#). (2024); Rahier, N. (2024). [Evidence on Demonstration Effect of DFIs on Private Infrastructure Investment](#). K4DD Rapid Evidence Review 41. Brighton, UK: Institute of Development Studies; Chengming Li, Guanyu Guo, Huangying Gu, Xiaoqi Dong, [How green bonds exert a demonstration effect on firms within the same region](#), Economic Analysis and Policy, Volume 86, 2025; Bossink, Bart AG. "[Demonstration projects for diffusion of clean technological innovation: a review](#)." Clean Technologies and Environmental Policy 17, no. 6 (2015): 1409-1427.

²³ While it is beyond the scope of this note to evaluate potential demonstration effects in California, competition-eligible lines are one example of a project-class that could benefit.

²⁴ In the case of utility tax equity partnerships, a utility worked with a tax equity partner to establish a partnership in order to more effectively monetize the federal investment tax credit. Utility accounting regulations require a utility company to spread the value of the ITC over time, reducing its attractiveness as collateral for low cost financing (this is called tax normalization). To avoid this problem, the utility rate based its investment into the project development partnership and bought electricity from the project under a PPA priced to create enough cashflow for the tax equity partner’s returns. The combined structure is designed to reduce costs relative to a 100% utility financed project or energy purchased from a third party developer. See Keith Martin, "[Utility Tax Equity Partnerships](#)" *Norton Rose Fulbright Project Finance News Wire*, August 13, 2021.