Fixing the real cost shift: Transmission costs in California

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Mission

To accelerate the transition to renewable energy and a modern grid through technical, policy, and project development expertise.

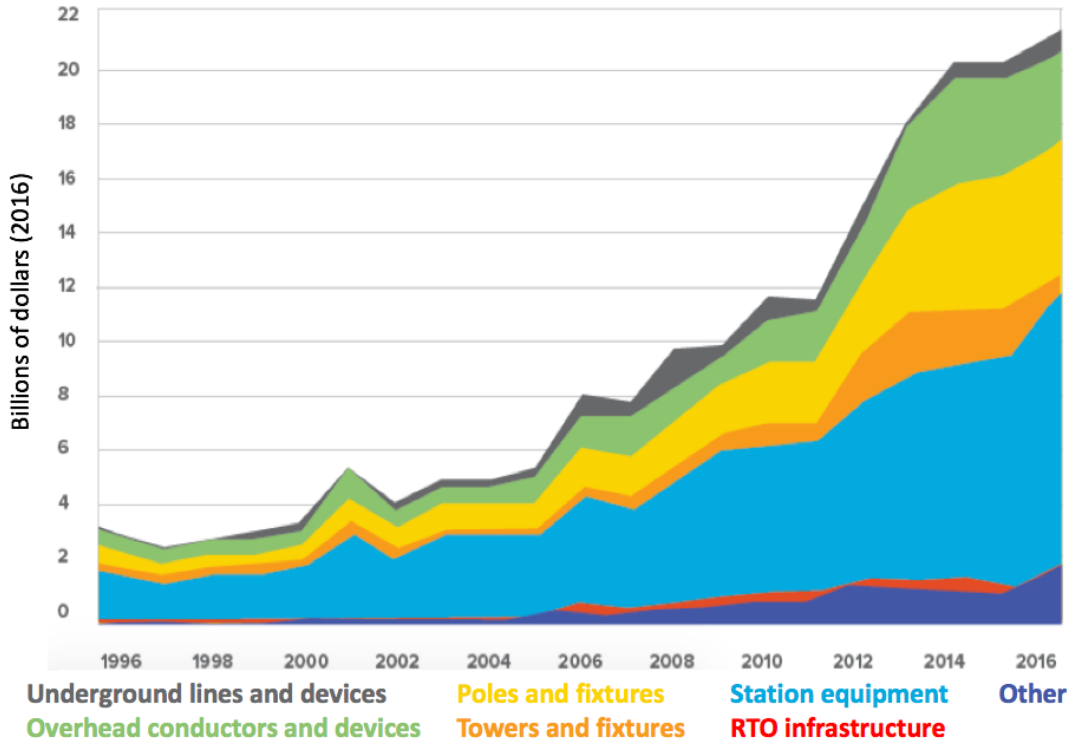
100% renewable energy end-game

- 25% local, interconnected within the distribution grid and facilitating resilience without dependence on the transmission grid.
- 75% remote, dependent on the transmission grid for serving loads.

Transmission costs are fastest-growing component of electricity costs

- Transmission costs are the fastest-growing component of your electricity bill.
- Guaranteed 12% return-on-equity (ROE) for transmission investments leads to conflicts of interest and perverse market outcomes — like the Transmission Access Charges (TAC) market distortion, **the real cost shift happening in California**.

The explosion in transmission spending by major utilities, 1996 - 2016



Transmission costs higher than they seem due to O&M driving ~10x increase to upfront costs

- Capital costs of transmission infrastructure represent a fraction of total transmission costs.
- Operations and maintenance (O&M) and ROE drive up transmission costs significantly over asset lifetime, with those excessive costs borne by ratepayers.

Nominal costs

Asset value capital cost ($100 base)	$100
Return	$197
O&M	$631
Total nominal ratepayer cost per $100 investment (50 years)	**$928**

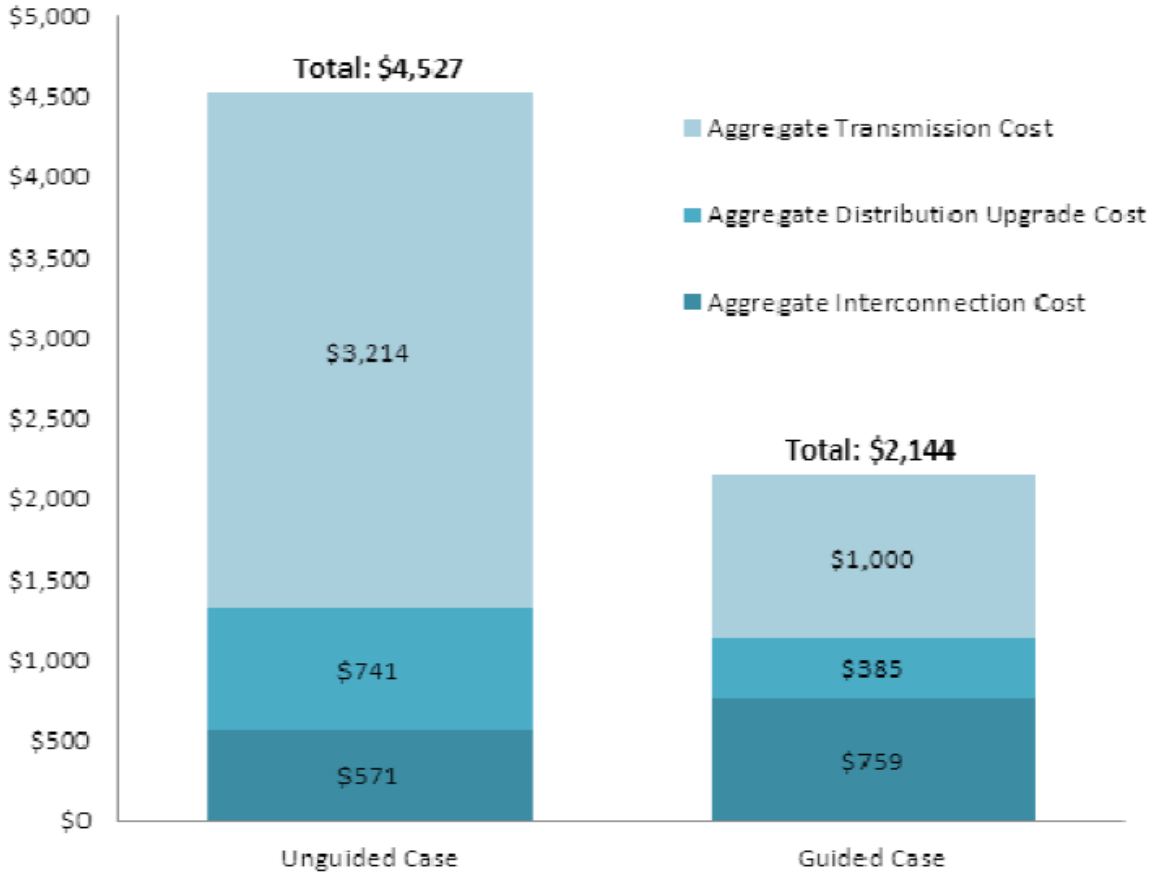
Real costs, discounted for inflation

Discount rate	2.19%
Asset value capital cost ($100 base)	$100
Return, discounted	$140
O&M, discounted	$296
Total discounted (real) ratepayer cost per $100 investment (50 years)	**$536**

In nominal dollars, total lifetime ratepayer cost is nearly 10x the initial capital cost; O&M accounts for 68% of this because it increases much faster than inflation. In real dollars (constant value dollars, accounting for inflation), the total lifetime cost is 5x the initial capital cost, and O&M accounts for 55% of this.

Local solar+storage optimize the grid for ratepayer savings

- Intelligently siting 4 GW of local solar would preempt over **$2.2 billion** in new transmission infrastructure investments — about **$20 billion** in ratepayer savings when considering O&M. (Southern California Edison study)
- Transmission costs are always borne by ratepayers, while distribution & interconnection costs are borne by solar project developers.

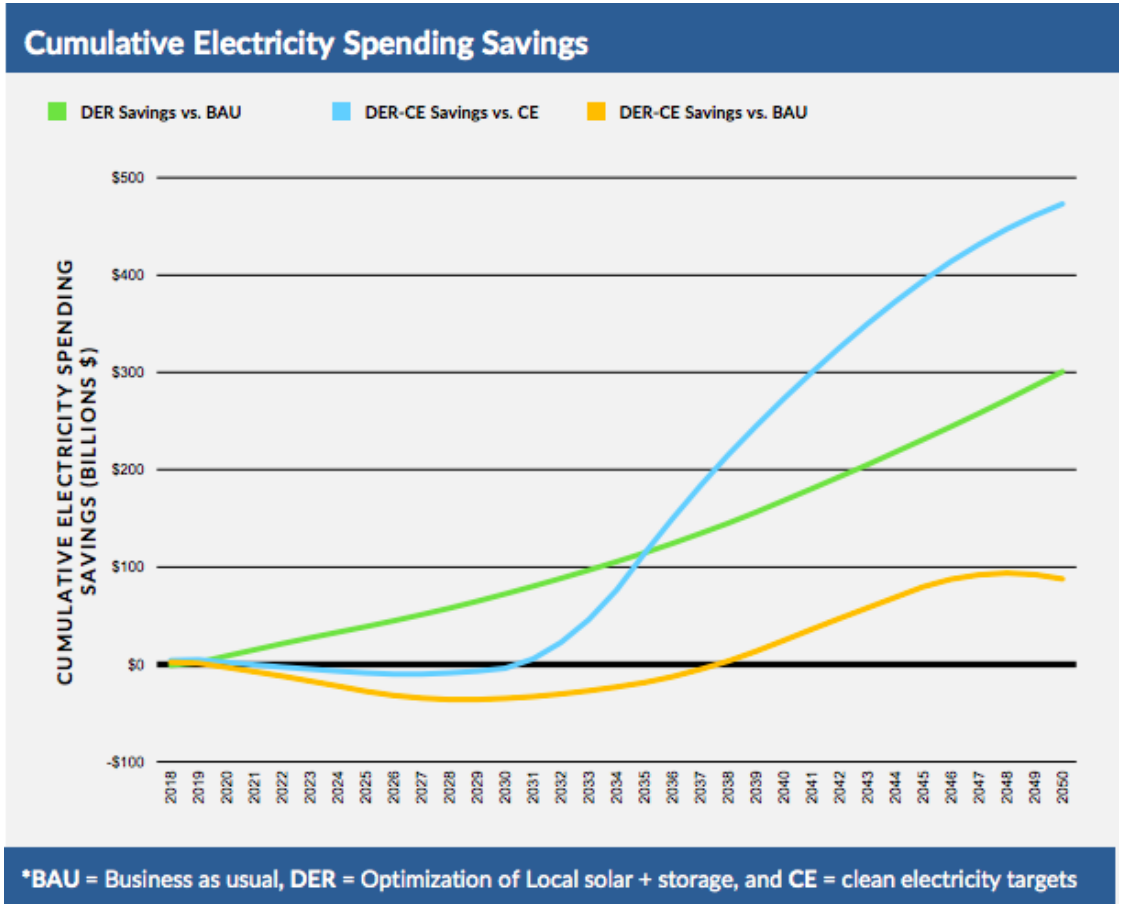


Evidence that local renewables defer transmission spending

- Preempting transmission spending by deploying local renewables is not theoretical.
- In CAISO's 2017–2018 planning process, they **deferred $2.6 billion in planned transmission spending.**
- This was due in large part to increased deployment of local renewables + increased energy efficiency (see https://www.utilitydive.com/news/efficiency-ders-saving-26b-in-avoided-transmission-costs-caiso-says/519935/)
- In 2021, utilities are charging ratepayers $4 billion in transmission.
- This is a 66% increase over 2016 in PG&E territory alone.
- Utilities are also charging California ratepayers $5 billion in wildfire liability expenses.
- **These are the real cost shifts**.

Local solar+storage optimize the grid for ratepayer savings

- Deploying enough large solar and wind farms to decrease CO2 emissions by 95% by 2050 would **cost Americans $385 billion more** for power over the next 30 years.
- Scaling up local solar+storage in coordination with utility-scale renewables, we can achieve the same clean-energy goals while **saving $473 billion**.



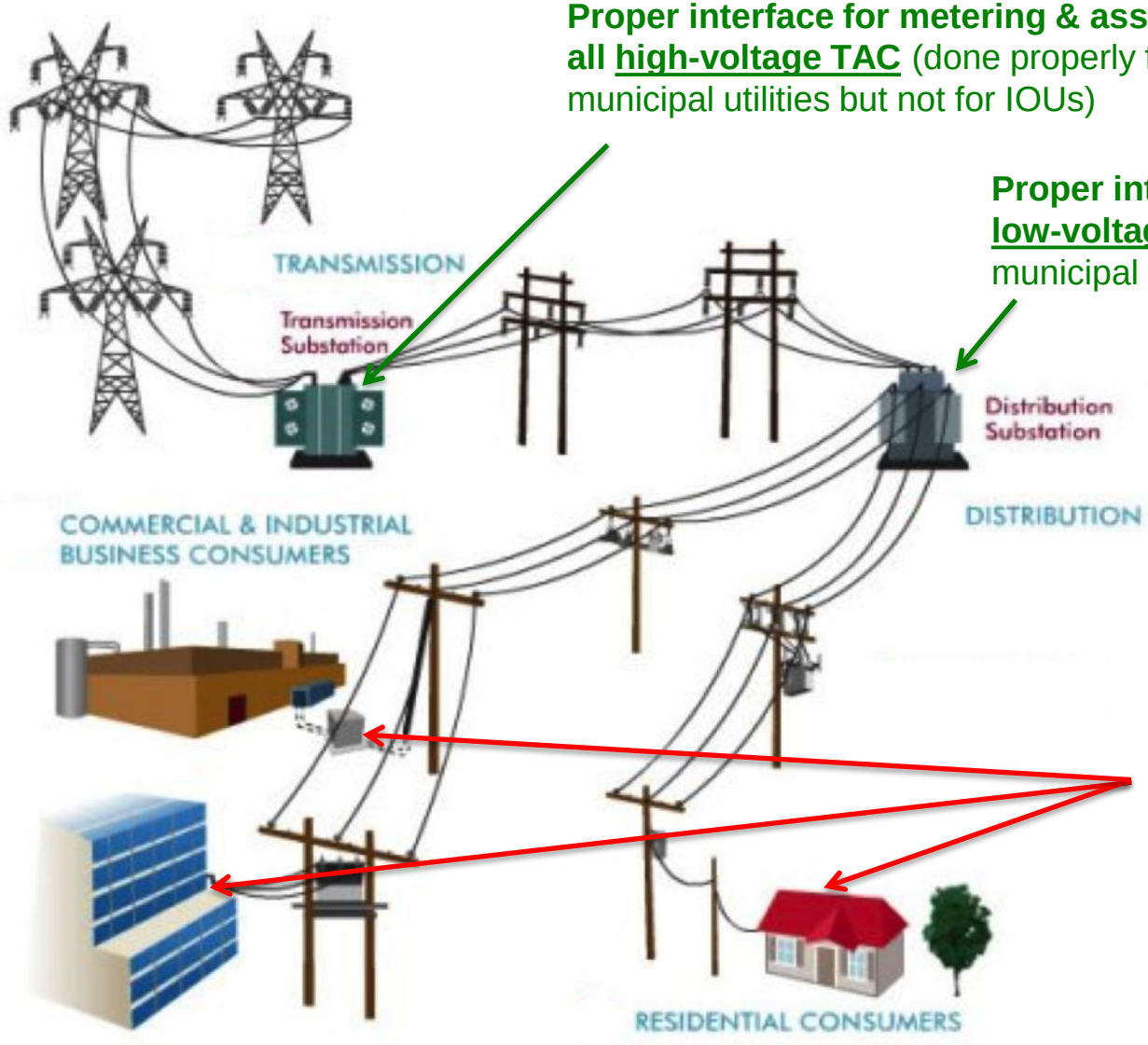
Source:
Vibrant Clean Energy

TAC cause massive market distortions — the real cost shift happening in California

Clean Coalition

Proper interface for metering & assessing all <u>high-voltage TAC</u> (done properly for municipal utilities but not for IOUs)

Proper interface for metering all <u>low-voltage TAC</u> (done properly for municipal utilities but not for IOUs)



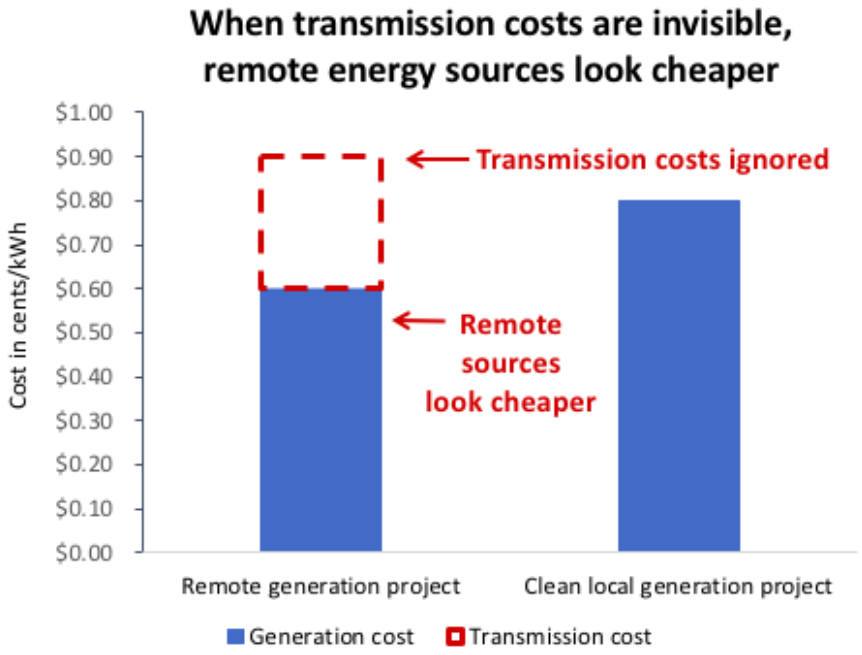
Current interface for metering TAC in IOU service territories
(at customer meters, with no distinction of energy from next door vs 1,000 miles away)

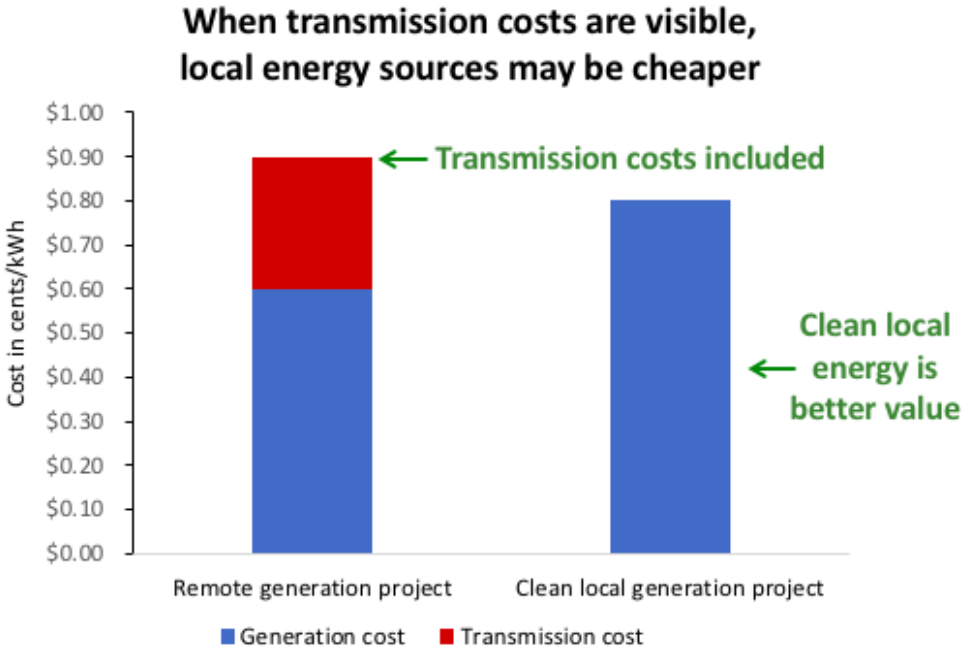
TAC market distortion: The real cost shift

- Transmission Access Charges (TAC) in California's IOU service territories are metered and assessed incorrectly, at the customer meter.
- That's like paying extra shipping & handling fees for something you pick up next door, or paying a toll if you don't cross a bridge.
- This is the real cost shift happening in California.

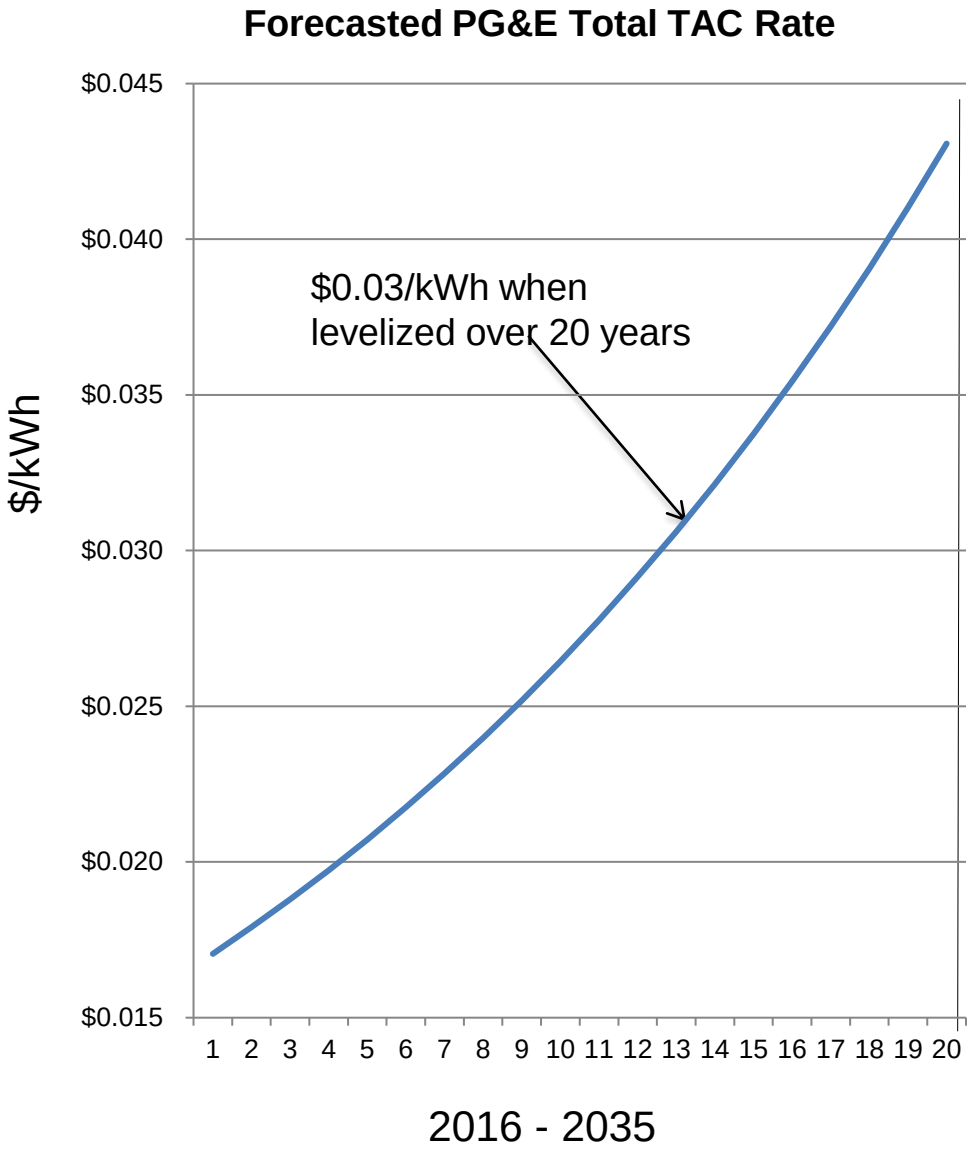
How the TAC market distortion cost shift makes local renewables look less cost-effective

- 3¢/kWh is being stolen from local renewables, making them look more expensive.
- Stealing funds from DER-driven Community Microgrids that deliver [community resilience](#).





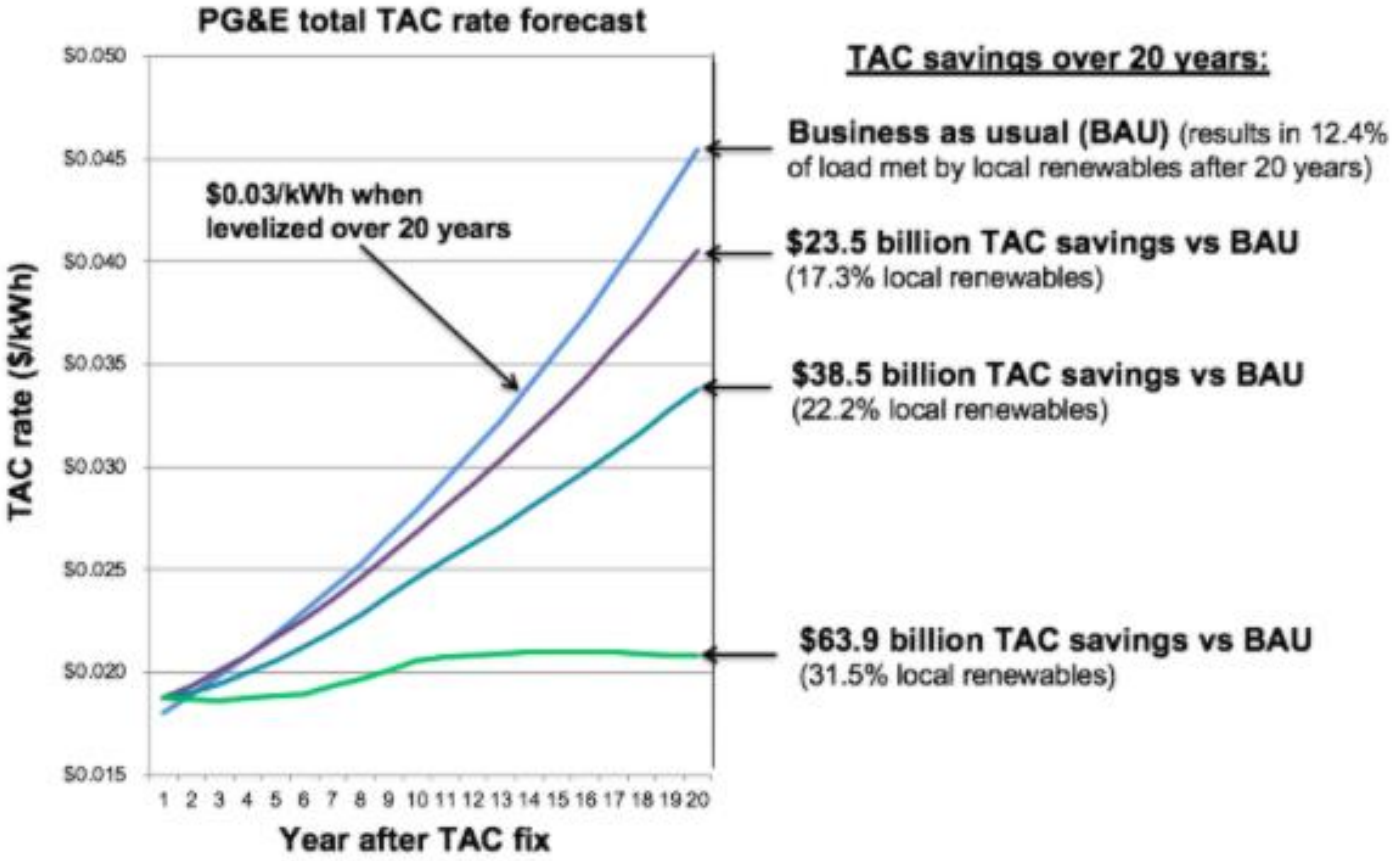
TAC are growing fast to ~4.5 cents/kWh over 20 years (levelized 3 cents/kWh)



The 20-year levelized TAC is about 3 cents/kWh, which is roughly 50% of the average wholesale cost of electricity in California!

Not fixing TAC could cost Californians $60 billion over the next two decades

- Generating energy closer to where we use it = less expensive transmission infrastructure, which lowers costs for ratepayers.
- Continuing with business as usual could cost Californians ~$60 billion in avoidable transmission costs over 20 years.



Fix the real cost shift!
Proposed TAC reform and supporters

1. Only charge transmission fees for energy delivered through the transmission system.
2. Have procurement reflect both the energy purchase price and the delivery charges.

85+ organizations supporting, including CALSSA, Sunrun, Vote Solar, Sierra Club California, The Climate Center, 350 Bay Area, 350 San Diego, Enphase, Microgrid Resources Coalition, California Alliance for Community Energy, California Consumers Alliance, Californians for Energy Choice, Center for Biological Diversity, Center for Sustainable Energy, Climate Action Campaign, East Bay Power Alliance, Environment California Local, Fossil Free California, San Diego Energy District — and many more.

TAC Campaign status

- CAISO has agreed that TAC reform is needed but said the CPUC would need to take action.
- CPUC staff have agreed the issue should be taken up.
- We need legislation to compel CAISO and the CPUC to take action.
- We have received some interest among California state legislators to include TAC Reform language in legislation this year.
- For more, see: https://clean-coalition.org/policy/transmission-access-charges
- Sign on your org to support the TAC Campaign: https://forms.gle/x6vdjz8Qg5YUqckKA

TAC reform takeaways

- **The real cost shift is excessive transmission spending**. Our current outdated system is shifting costs; our proposed TAC reform will help fix that existing cost shift and lower costs for all ratepayers.
- **TAC reform is one necessary piece of the puzzle** to accelerate and facilitate local renewables — which will provide resilience, boost local economies, and create jobs.
- **We also need to fix our outdated utility business model** — which perversely incentivizes transmission buildout over local renewables — to incentivize utilities to support rather than fight local solar.
  - An effective way to do this would be to divest utilities of their transmission assets (see https://www.utilitydive.com/news/how-to-protect-california-ratepayers-expand-clean-local-energy-and-avoid-b/554564)
- **We need to fix the real cost shift**. We must implement the policies and market fixes needed to deploy more local renewables & renewables-driven community microgrids — so we meet our clean energy goals and get the energy resilience we need, as well as the many other benefits of local renewables.