## Transmission Cost Allocation

Transmission adds a layer of complexity in large load rate design, given the challenges of allocating costs of shared infrastructure. Most existing transmission cost allocation formulas were not designed to directly attribute the connection costs of large loads to the specific customers that triggered them. One concern is that this causes transmission connection costs to be paid by all ratepayers instead of a clear attribution to new large loads. In practice, it is crucial to determine the two types of transmission interconnection that need to be treated separately:

- Attributing cost shares to **dedicated facilities** can be relatively straightforward: large customers such as data centers can fund their dedicated interconnection facilities and any distribution upgrades needed to serve their load. Importantly, ratemaking processes need to be designed to ensure such direct attribution, which may require updated regulation.[17]
- In contrast, **shared transmission** assets serve broader regional reliability and economic needs, making it inherently difficult to isolate the costs attributable to specific users and beneficiaries. This challenge is not new or unique to large loads; transmission cost allocation has long been one of the most contentious issues in rate design and a persistent barrier to grid expansion and modernization.

Transmission costs are typically allocated across users based on capacity and/or energy use consistent with cost-causation principles, and potential benefits. But determining who benefits and to what extent can be challenging and further complicating the long-term nature of these assets and the uncertainty inherent in long-term forecasting. Benefits of new transmission investments can be meaningful, such as avoiding or deferring other infrastructure, reducing operational costs, and improving system reliability and resiliency. The "right" cost allocation depends on several factors and will vary by jurisdiction. Some key principles and considerations to help promote fair allocation include:

- **Build in flexibility:** Recognize that infrastructure initially driven by one or a few large loads may later provide broader system benefits. Consider crediting or refunding costs once wider benefits are demonstrated and quantified.
- **Ensure transparency and predictability:** Base allocation frameworks on clear, objective metrics to reduce regulatory uncertainty and investment risk.
- **Balance precision with practicality:** Overly granular methods can become administratively complex and delay needed infrastructure.
- **Update allocation factors regularly:** Revisit cost allocators as system conditions and load growth evolve to prevent unintended ratepayer impacts.
- **Plan proactively:** Use long-term integrated system planning to anticipate growth, reliability needs, and clean energy goals, enabling more forward-looking and equitable cost distribution. More transparent planning tools, such as publicly available hosting capacity maps for load,[18] may help guide siting decisions by identifying available infrastructure and directing new load to areas with existing capacity to reduce system costs.[19]

With large load growth increasing both the scale and pace of transmission investment, transmission cost allocation is becoming even more consequential. Thoughtful application of established principles that are grounded in cost causation, transparency, flexibility, and forward-looking planning can help minimize cost shifting while ensuring that needed transmission investments move forward in a timely and responsible manner.

These tools can be effective in managing potential impacts and mitigating risk but many have not yet been fully tested at scale, such as through rate case proceedings, and their effectiveness will ultimately depend on how projected load materializes and system conditions evolve, underscoring the importance of ongoing monitoring over time.

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[17] Union of Concerned Scientists. (2025, September). Connection costs loophole costs customers over $4 billion to connect data centers to power grid (Policy brief). https://www.ucs.org/sites/default/files/2025-09/PJM%20Data%20Center%20Issue%20Brief%20-%20Sep%202025.pdf

[18] See Xcel Energy example: https://mn.my.xcelenergy.com/s/renewable/developers/interconnection/hosting-capacity-map

[19] Interview with Natalie Mims Frick, Lawrence Berkeley National Laboratory, April 2026