

**i2X DER Interconnection Webinar 4**  
**“Promoting Economic Efficiency in Interconnection–Part 2: Cost Allocation”**  
**October 22, 2025**

**Key Takeaways**

The webinar discussed potential new models for allocating distribution system upgrade costs related to distributed energy resource (DER) interconnection. The webinar explored possible alternatives to reforming the typical “cost-causer pays” model to fairly distribute upgrade costs to all beneficiaries, using group study processes to reduce costs per project, and proactively upgrading feeder circuits. Panelists included Grace Relf, Lawrence Berkeley National Laboratory (LBNL); Kate Tohme, New Leaf Energy; Brian Ritzinger, Massachusetts Department of Public Utilities (MA DPU); Arthur O'Donnell, New Mexico Public Regulation Commission (NM PRC); and Ron Nelson, Current Energy.

Stakeholder questions and audience discussion spanned cost allocation structures with respect to who pays, differences between cost sharing approaches at the distribution and transmission levels, and implementation of evolving cost sharing models.

**Presentation Summaries**

- **[Grace Relf](#), LBNL**

The traditional approach for allocating electric utility costs for DER interconnection is the cost-causer pays model, where the DER project that triggers the need for grid upgrades pays the full cost, even when other customers also will use the upgraded distribution equipment. Among the challenges to this model are free ridership, interconnection delays, high costs for certain interconnection customers, cost uncertainty, lack of alignment between electricity loads and DER exports in allocation of distribution upgrade costs, and disconnection of interconnection cost allocation from grid planning for growing loads. Alternative approaches for assigning costs include direct assignment, fixed fees, pro-rata allocation, and using established rate case allocators.

- **[Kate Tohme](#), New Leaf Energy**

The current approach to DER interconnection is largely reactive, whereby infrastructure upgrades are triggered by interconnection applications, which can cause delays and cost uncertainty. Proactive approaches can identify and construct infrastructure upgrades to increase DER hosting capacity in advance of interconnection applications to provide more certainty with respect to timing and costs.

Several states are testing and implementing new models for cost allocation. Improved *reactive* cost allocation methodologies include the following:

- *New York* – Interconnecting customers pay their pro rata share of infrastructure upgrades over time.
- *Massachusetts* – Multiple beneficiaries share costs of utility infrastructure investments triggered by group studies.
- *Maryland* – Interconnecting customers across the state share infrastructure upgrade costs through a \$/kW charge that acts as a locational price signal for hosting capacity.
- *Connecticut* – Small interconnecting facilities share interconnection costs through a fixed charge at the time of interconnection.
- *California* – Utilities conduct group studies and allocate upgrade costs for electrically interrelated DER projects based on nameplate capacity.
- *Minnesota* – For small facilities (<40 kW), costs are shared; for large facilities, a working group will recommend a pro rata approach to meet legislative requirements.

New York and Maryland implemented *proactive* approaches that anticipate growth of distributed generation and recover prorated costs from future interconnecting customers that share capacity enabled by the distribution upgrade.

- **Brian Ritzinger, MA DPU**

Massachusetts uses group studies, cluster studies, and a new [provisional framework](#) to determine cost sharing for distribution system upgrades. The provisional framework allows regulated utilities to file Capital Investment Projects to plan and fund essential upgrades for DER interconnection, limiting interconnection costs allocated to each DER facility. Ratepayers fund a portion of these projects over 20 years. Among the eligibility criteria are identification of the proposed upgrade through a distribution or transmission impact study for an Affected Group Study, as well as an upgrade cost of ≤\$500/k for interconnecting customers. A proceeding is underway to replace Capital Investment Projects with a Long-Term System Planning Process. Also under consideration is a common system modification fee for all systems seeking to interconnect through the Simplified Process, at the time of interconnection, regardless of whether the system triggers the need for modifications such as transformers. Fees would be pooled to cover the cost of these modifications.

- **Arthur O'Donnell, NM PRC**

Under New Mexico [PRC Interconnection Rule 568](#), the PRC determines on a case-by-case basis whether distribution system upgrades necessary for interconnection of community solar projects are eligible for some form of cost sharing:

- “(a) among several developers using the same distribution facilities;
- (b) among all ratepayers of the qualifying utility via rate base adjustments; or
- (c) among ratepayers of the same rate class as subscribers to the community solar facility via a rate rider for that class.”

To determine public benefits for cost-sharing, the PRC uses the same analysis required for cost-sharing or rate basing grid modernization projects under the Grid Modernization Act (2019), [Section 62-8-13](#). Another rulemaking for community solar begins in early 2026.

- **[Ron Nelson](#), Current Energy**

The [Maryland Cost Allocation Model](#) (MCAM) uses two approaches to cost allocation, depending on voltage and available hosting capacity:

- *Primary voltage interconnections* – If hosting capacity is available, the interconnection customer pays a \$/kW fee based on grid location. If hosting capacity is not available, multiple interconnection requests can be clustered together, and each interconnection customer pays for necessary distribution system upgrades proportional to that customer's utilization; remaining costs are allocated to future interconnection customers using the location-based methodology.
- *Secondary voltage customers* – Residential interconnection customers pay a flat fee, and commercial interconnection customers pay a per-kilowatt fee, based on total respective upgrade costs for the prior year.

An export tariff is an electric service agreement for interconnected DERs that combines compensation for services provided to the grid (e.g., peak load reduction, voltage support), as well as cost allocation and recovery for export-related impacts (e.g., necessary distribution capacity upgrades, new monitoring and control systems). Export tariffs align utility incentives with improved utility services for DER exports, including an opportunity for the utility to earn a return on investments in hosting capacity, continued revenue through recurring fees on monthly bills for DER exports based on use of the grid, and integrating hosting capacity upgrades into the distribution system planning process to demonstrate prudence for cost recovery requests in subsequent rate cases.

## Major Themes

Major themes raised in the webinar include challenges with the cost-causer pays model, the potential for pro-rata and group cost-sharing mechanisms to address some of these challenges, opportunities for proactive approaches to planning and cost recovery, innovations through flexible interconnection and export credits, and the crucial role of stakeholder engagement and transparency.

1. **The cost-causer pays model, which assigns full responsibility to the initial interconnecting project, raises many challenges.** Among them is free ridership, which Relf (LBNL) explained “allows subsequent interconnecting customers or DERs to benefit from that upgrade without paying for it.” The model also encourages speculative interconnection applications solely to discover costs, clogging interconnection queues. In addition, assigning full upgrade costs to a single project can be economically prohibitive, causing projects to be withdrawn or cancelled — even though they may have been built if the utility considered other projects in the interconnection queue or forecasted other

DERs as well as loads that could benefit from the upgrade. More economically efficient cost allocation models can address many of these challenges.

Tohme (New Leaf Energy) stated that “with cost causation we're in a reactive state. This is the state of affairs that's most common across the country. [...] This reactive state results in timeline delays, lack of regulatory certainty. We're reacting to development driven by [DER] versus reacting to what might be most strategic for modernizing our grid. [...] I believe where we should all be headed eventually is to the proactive state.”

Ritzinger (MA DPU) commented that “cost causation works great until it doesn't... and then when it fails, it fails pretty miserably.” In Massachusetts, “even small systems are triggering a need for a transformer upgrade, [...which] could kill the project” due to high associated costs.

O'Donnell (NM PRC) highlighted financial strains for DER projects, noting that “two of the [community solar] developers found themselves behind another project in the queue, and were told that their upgrade costs would exceed \$10 million. They petitioned the Commission for cost-sharing approval, saying that these upgrades would be cost prohibitive and will probably kill the projects.”

Nelson (Current Energy Group) pointed to the need for evolving cost allocation: “A lot of times when connecting facilities ... they use a portion or all of the system for free. And that creates perverse incentives for the utility. [It] doesn't really make them want to connect them. And it creates perverse incentives for the DER because they don't have a price signal to change their behavior and to lower the costs that they are causing to the system at certain times.”

- 2. Adoption of pro-rata and group cost-sharing mechanisms are emerging best practices.** A central theme was the shift toward pro-rata cost sharing, where costs are divided proportionally among DER projects that benefit from an upgrade.

For instance, under New York's Cost Sharing 2.0, each DER project pays only its pro-rata share based on its usage of the added distribution capacity (e.g., a DER project that uses 10 MW of a 100 MW upgrade pays 10% of the cost). Tohme (New Leaf Energy) described this approach as a “full reactive prorated cost share methodology, where even the triggering facility is only paying for their pro-rata cost of the share. [...] There's a market-initiated upgrade and a utility-initiated upgrade. They're both based on this pro-rata cost methodology.”

Minnesota is developing a similar cost-sharing methodology, with unique features like prioritization methods and cost envelopes to provide certainty for DER projects.

Nelson (Current Energy) described Maryland's Cost Allocation Model “a twist on pro-rata shares” where the connecting facility pays a pro-rata share and “the remainder of the upgrade costs are then spread across the whole distribution system.”

Massachusetts uses a “group study” or “cluster study” process to allocate common system modification costs among a cluster of projects, rather than processing them sequentially. Ritzinger (MA DPU) explained that in Massachusetts “we’re evaluating projects in a group study or a cluster study. We would take the pro rata based upon your contribution to the overall impact.” In addition, the provisional program shares costs between ratepayers and the developers. “But within the developers, as that cost for that upgrade is being attributed to that group, it will then be allocated based upon whatever percentage your share is of those necessary upgrades.”

O'Donnell (NM PRC) noted that New Mexico's interconnection rule “allowed for sharing costs among multiple subscriber organizations.”

### **3. Proactive grid planning has several advantages.**

A proactive approach identifies future infrastructure needs based on state requirements and DER and load forecasts and constructs distribution upgrades in advance of need, providing greater certainty regarding timing and costs and distributing costs among all beneficiaries. That's in contrast to reactive approaches, which simply responds to individual interconnection requests.

As Tohme (New Leaf Energy) explained, “In that proactive state, [...] we are modeling and forecasting for the electric power system as a whole, and looking how we need to modernize our grid in order to meet new circumstances and meet our state's clean energy mandates. In the proactive state, we're identifying need [for] infrastructure upgrades, both for generation and load, and then we're constructing those infrastructure upgrades in advance of that reactive need. In the proactive state, we have regulatory certainty of timing and costs. We can cost share over time in a service territory, and we can also provide siting signals that are driven by what could be most beneficial to the state, versus just where development is already occurring.”

Massachusetts is moving toward a Long-Term System Planning Process, that will assess a hosting capacity fee to DER facilities based on their pro-rata share of common infrastructure costs. Ritzinger (MA DPU) described that “the Legislature enacted a new process [for] requirements for a long-term system electric planning that effectively replaced the DPU’s investigation (in DPU 20-75). EDCs contend that the proactive hosting capacity fee is based on the principles of beneficiary pays [and] send development signals on cost efficiency. It is intended to promote [...] distribution of costs between DER facilities and ratepayers.”

In New Mexico, the PRC is using the Grid Modernization Act methodology for sharing the cost of upgrades that provide public benefits, specifically targeting community solar and low-income access. O'Donnell (NM PRC) explained that “we were in a situation where, while our utilities did internal distribution planning, they did not share that with the Commission. We did not know what their plans were, and when we started looking at [what] they were actually doing, we were finding that it was a very limited approach based on load. [...] Now, [with] electrification [and] incorporation of renewable energy,

all of those things are demanding a higher level of analysis from the utilities about their own systems....”

#### **4. Innovations like export tariffs and flexible interconnection facilitate economic efficiency.**

Export tariffs, used in Australia, charge ongoing fees based on use of the grid and vary based on grid constraints, rather than relying solely on upfront interconnection charges. Nelson (Current Energy) discussed how this approach creates price signals that encourage economic efficiency and mitigate free ridership. Such tariffs are a way to “change the whole paradigm” by treating “exporting facilities... as customers [of] the distribution utility.”

Flexible interconnection can reduce the need for expensive distribution upgrades through limits on system use and dynamic operating envelopes. These mechanisms may allow DERs to connect to the grid before upgrades are completed, or interconnect at lower cost by agreeing to curtail exports during certain peak constraint periods.

Relf (LBNL) described “flexible interconnections that aim to make better use of the distribution system to allow DERs to interconnect at [a] lower cost” as a key strategy to improve economic efficiency. Ritzinger (MA DPU) agreed that “flexible interconnections can reduce the amount of investment that has to get put forth to accommodate all these resources.” Nelson (Current Energy) stated that “we should be prioritizing flexible connections. We should be trying to not build the system to the peak.”

#### **5. Stakeholder engagement and transparency play a critical role in implementing updated cost allocation models.**

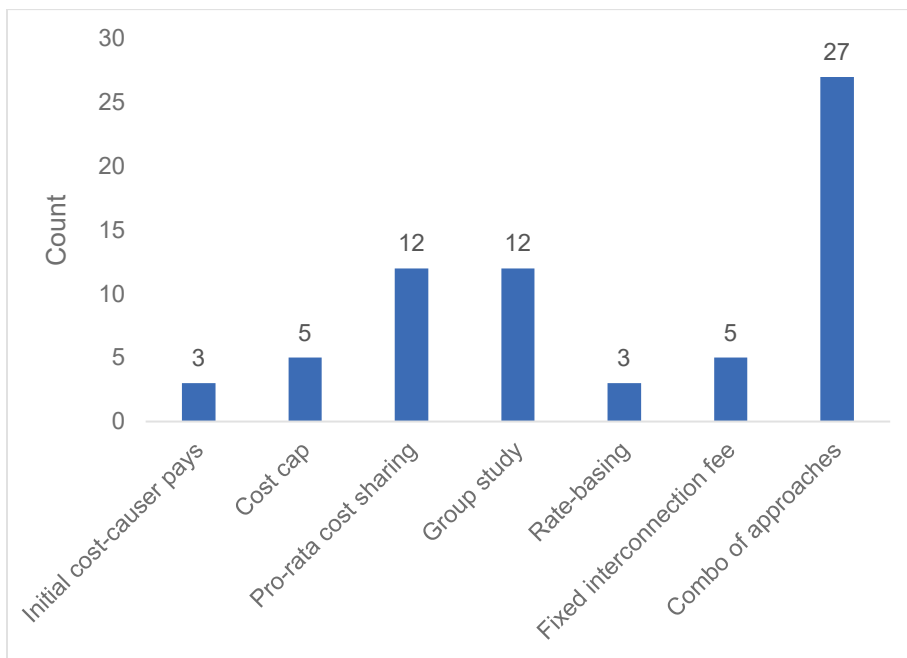
- *Working Groups* – Effective working groups — with robust collaboration between regulatory staff, utilities, utility consumer advocates, developers, and others — are essential before regulators adopt new cost allocation provisions. Relf (LBNL) observed that “effective working groups have been really helpful to improve dialogue and streamline the process once you do get to that formal phase.” Tohme (New Leaf Energy) shared her experience in Minnesota where “there was a working group that was formed [...] There were 11 meetings and we came up with a set of draft standards. That set of draft standards was filed with the Commission. A notice was issued in September seeking comments, and it's now open for comment, discussion, and [it] will likely be [addressed in] a Commission ... meeting in the new year.”
- *Internal Champions* – O'Donnell (NM PRC) noted, “A new generation of utility engineers has come in that are much more receptive [...]. What we found was, identify the internal champions for doing this and get them into your process, because they will help carry the message.”
- *Transparency* – Transparent distribution system planning and data sharing are necessary precursors to successful proactive planning for DER interconnection. Without transparency, regulators and stakeholders cannot effectively assess the need for proposed upgrades and utility plans to address those needs. Ritzinger (MA DPU) stated that “having a transparent process, having a robust stakeholder process..., getting people

involved and engaged, getting their buy-in [...] as you're making these significant changes is hugely important.” Nelson (Current Energy) stressed that “you need to be starting with transparent regulatory processes and ensuring that utilities are already doing best practices before we start talking about proactive investment.”

## Audience Polls

### 1) What models of cost allocation have been most effective at improving efficiencies?

The majority of respondents selected a combination of approaches as most effective in improving efficiencies. Pro-rata cost-sharing and group study were selected as the second most effective approaches.



### 2) What changes are being considered to DER interconnection cost allocation in your jurisdiction or in jurisdictions you've worked in?

The audience provided a variety of responses, including a flat fee, a more proactive cost allocation approach, and cost sharing (e.g., MCAM). One respondent shared that the Public Utility Commission of Texas is evaluating whether to apply the methodology used for wholesale transmission costs to distribution providers (as mandated by Senate Bill 6 from (2025)). Another respondent shared that Illinois recently made several changes through regulations and has an ongoing Interconnection Working Group. Another participant shared that the Virginia State Corporation Commission recently discussed cost justifications for direct transfer trip protection schemes in an evidentiary hearing (PUR-2024-00211).