Managing Interconnection Costs Part 1 - Cost Allocation

Distributed Energy Resource (DER) Interconnection Cohort: Meeting 3

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This work was funded by the Interconnection Innovation e-Xchange (i2X), a U.S. Department of Energy initiative supported by the Office of Critical Minerals and Energy Innovation, under Contract No. DE-AC02-05CH11231.

Objectives

Cohort objectives

- Support an interested group of utility regulatory commissions to better understand DER interconnection practices and advance solutions
- Provide participants with practical information and actionable templates, frameworks, and model language for jurisdictions to adapt for their specific circumstances
- Support peer-sharing and continuous learning

Today's objectives

- Provide information on how cost allocation approaches affect interconnection costs and timelines and on various cost allocation methodologies
- Hear from states with experience exploring or implementing new cost allocation approaches

Agenda

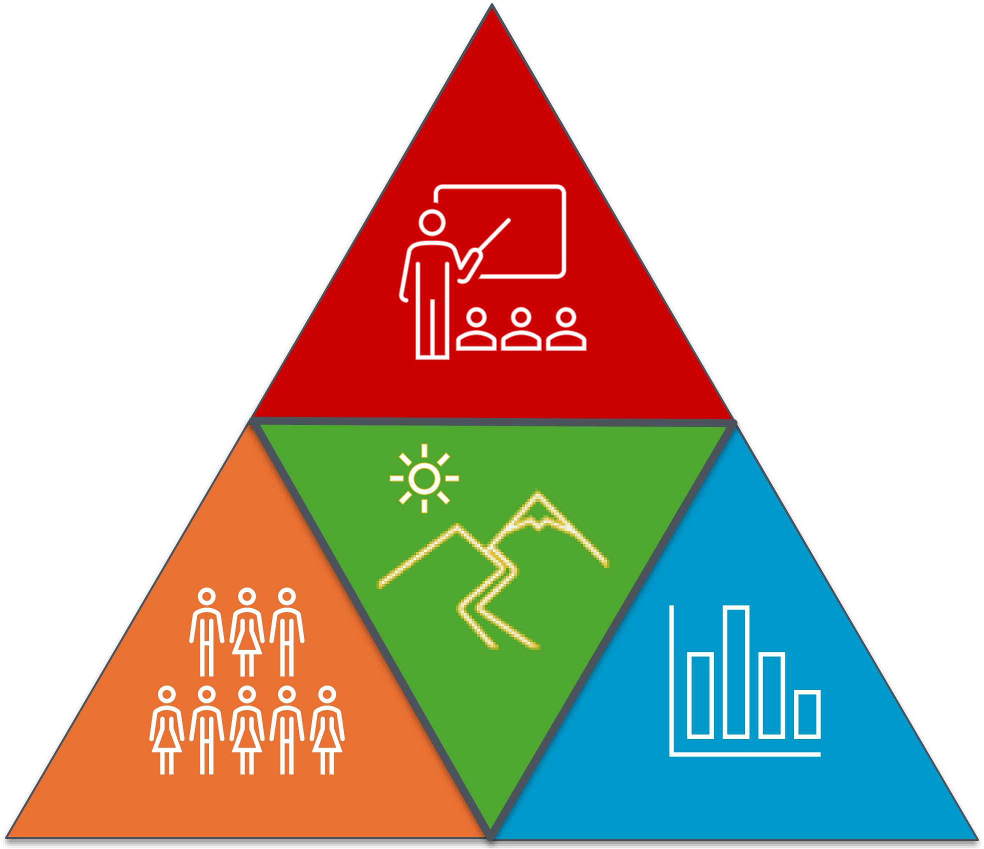
- Welcome
  - Brief review of i2X initiative and cohort plan
  - Participant introductions & check-in question: **If there is discussion happening in your state about the impact of DER interconnections on grid upgrade costs, where are those taking place (e.g., rate case, DSP, IRP, DER or DSM docket, etc.)? If not, do you expect those conversations in the near future?**
- Presentation on cost allocation for DER interconnection
- Panel discussion – state experiences with updating cost allocation approaches
  - Derek Duran, Minnesota Public Utilities Commission
  - Manisha Lakhanpal, California Public Utilities Commission
- Review cost allocation calculator
- Closing and next steps

Review of i2X Initiative and Cohort Plan

i2X Mission and Key Elements

To enable **simple**, **fast**, and **affordable** interconnection while enhancing the **reliability** and **security** of our electric grid.

- **Strategic Roadmaps**
- **Stakeholder Engagement**
- **Data & Analytics**
- **Research & Innovation**



INTERCONNECTION INNOVATION e-XCHANGE
U.S. DEPARTMENT OF ENERGY

U.S. Department of Energy's DER Interconnection Solutions

Goal 1: Increase data access, transparency, and security for interconnection
- Data sharing guidelines
- Strategic use of automation
- Broaden use of hosting capacity analysis

Goal 2: Improve interconnection process and timeline
- Queue management
- Inclusive and fair processes
- Workforce development

Goal 3: Promote economic efficiency in interconnection
- Cost allocation
- Coordination between interconnection and grid planning
- Interconnection studies

Goal 4: Maintain a reliable, resilient, and secure grid
- Interconnection models and tools
- Interconnection standards

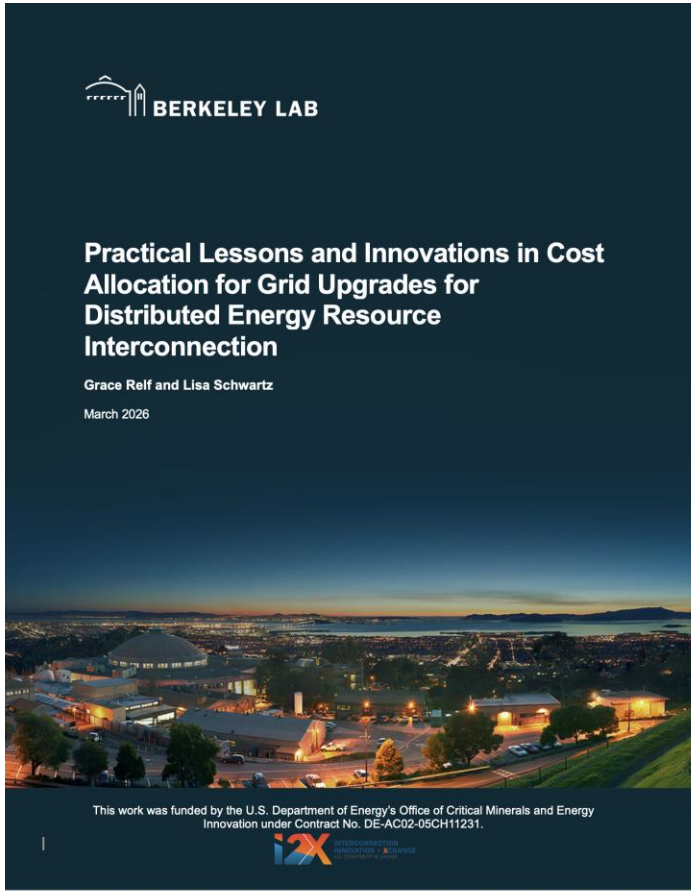
Measurable Success Targets for 2030

	Target	System Size*	2030 Target Value
Timing	(1) Median time from DER interconnection request to agreement§	< 50 kW	Within 1 day†
		50 kW–5 MW	< 75 days
		≥ 5 MW	< 140 days
Access	(2) Completion rate from entering the queue to execution of interconnection agreement	< 50 kW	> 99%
		50 kW–5 MW	> 90%
		≥ 5 MW	> 85%
Data	(3) Availability of public state-level interconnection queue data	All	50 states, Washington, D.C., and territories have public, detailed, and current queue data
Reliability	(4) No BPS disturbance events exacerbated by inaccurate DER modeling	All	0
Resilience	(5) Lower Customer Average Interruption Duration Index (CAIDI)‡	All	25% improvement (e.g., from 4 to 3 hours per occurrence)

* System size thresholds will vary across utilities and jurisdictions.
§ For systems that do not trigger system upgrades.
† Defined as 1 business day.
‡ CAIDI with loss of load removed but major event days included.

Berkeley Lab Resources

- Berkeley Lab is conducting research and developing tools on a variety of DER interconnection topics.
- Forthcoming technical documents
  - Cost allocation for grid upgrades
  - Automating DER interconnection processes
  - DER interconnection queues, timelines, and costs
- Additional resources
  - Forthcoming online DER interconnection cost and timeline data dashboard
  - Forthcoming cost allocation toolkit with model documents, checklists, and calculator
  - Educational trainings and webinars (including slides and recordings)
  - Technical assistance for states



Find out more: https://emp.lbl.gov/interconnection-innovation-e-xchange

Cohort Plan

- Meetings are monthly through September, from 3 – 4:30 pm ET.
- Topics to address key participant needs are:
  - **May 27th:** Interconnection Queues, Timelines, and Costs - Data Transparency
  - **Today:** Managing Interconnection Costs Part 1 - Cost Allocation
  - **July 29th:** Managing Interconnection Costs Part 2 - Distribution System Planning (DSP) and Capacity Expansion Modeling
  - **August 26th:** DER Interconnection Model Guidelines and Flexible Interconnection
  - **September 23rd:** Peer and Expert Coaching on Participant Questions, Follow-Ups from Past Meetings, and Additional Topics
- Commissioners and state agency staff can find past meeting materials and register for future meetings at: https://www.naruc.org/core-sectors/energy-resources-and-the-environment/der-integration-compensation/distributed-energy-projects-interconnection-cohort/

Participant Expectations and Introductions

- **Expectations**
  - Engage actively by attending as many meetings as possible and participating generously in conversations.
  - Create a collaborative space by sharing openly and respecting others' contributions.
- **Introductions**
  - Please say your name, agency, role, and a brief response to the check-in question**: If there is discussion happening in your state about the impact of DER interconnections on grid upgrade costs, where are those taking place (e.g., rate case, DSP, IRP, DER or DSM docket, etc.,)? If not, do you expect those conversations in the near future?**

Allocating Distribution System Upgrade Costs for Distributed Energy Resource Interconnection: Practical Lessons and Innovations

NARUC and LBNL DER Interconnection Cohort Meeting

Grace Relf, Lawrence Berkeley National Laboratory

June 23, 2026

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Agenda

- Background and Introduction
  - LBNL research
  - Terminology and scope
  - Drivers for addressing cost allocation for DER interconnection
- Sample Guiding Principles for DER Interconnection Cost Allocation
  - State examples
  - Example guidelines
- Cost Allocation Approaches and Frameworks
  - State Examples and Case Studies
- Wrap Up
  - Complementary tactics
  - Conclusions

Background and Introduction

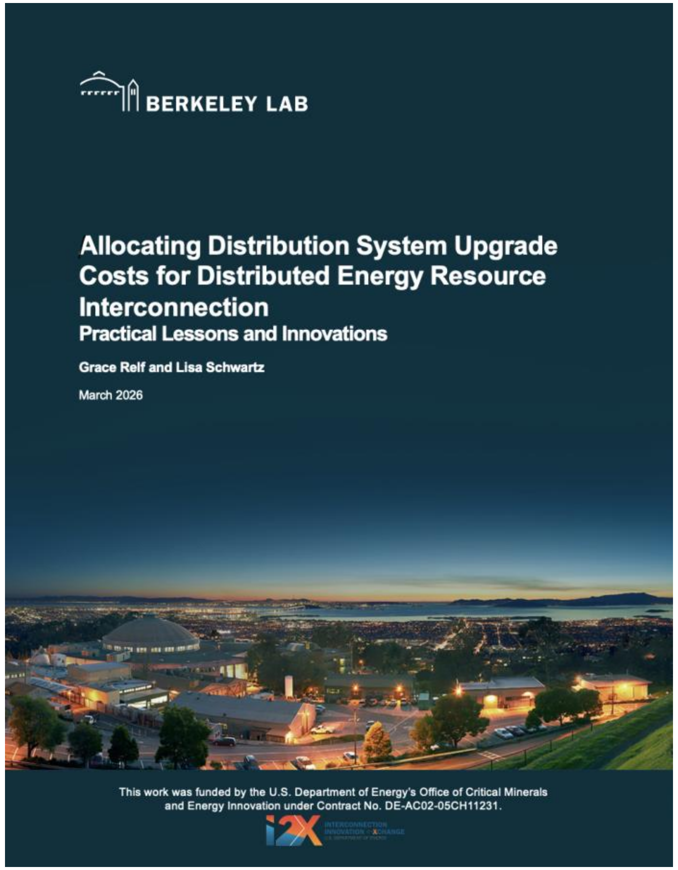
Berkeley Lab Research

Forthcoming Berkeley Lab research and an accompanying toolkit on cost allocation for DER interconnection

- Identifies drivers for considering new approaches to the cost-causer pays method
- Categorizes cost allocation strategies and frameworks for DER interconnection
- Describes complementary practices for advancing cost allocation methodologies
- Provides detailed information on leading state approaches, including results where available

Research methods include:

- Literature review & synthesis of common practices and key findings
- Comprehensive review of regulatory interconnection proceedings
- Structured expert interviews and engagement with a 17-member advisory group including utilities, regulators, developers, and state utility consumer offices in diverse locations
- Deep-dive into regulatory filings and related documents



Terminology

- *Beneficiary pays:* A principle recognizing that benefits may accrue to customers beyond the interconnection customer that triggered the grid need, including subsequent interconnection customers and ratepayers at large.
- *Cost allocation:* The process of determining how to divide costs among specific customers or customer classes.
- *Cost recovery:* How customers pay for costs the utility incurs to provide services.
- *Cost causation:* A principle that informs cost allocation, typically relying on determinations of why costs were incurred and who benefits from the associated investments.
- *Cost-causer pays:* A cost allocation approach that directly assigns all interconnection-related costs to the DER project that triggers the need for a utility distribution system upgrade.

Sources: Definitions adapted from MA DPU, 2021; EPRI, 2018, and RAP, 2020

Introduction

- The interconnection process determines whether the utility needs to upgrade its distribution equipment to accommodate a DER.
- Utilities commonly select distribution system equipment that is oversized compared to immediate needs.
  - Equipment may only be available in certain sizes.
  - Utilities may wish to create additional headroom for future load or DER interconnections.
  - Utilities may wish to add capacity for operational needs.
- Cost allocation for DER interconnection assigns cost responsibility for these upgrades.
- The interconnection customer that first triggers an upgrade typically is responsible for the full cost under the ***cost-causer pays*** model.

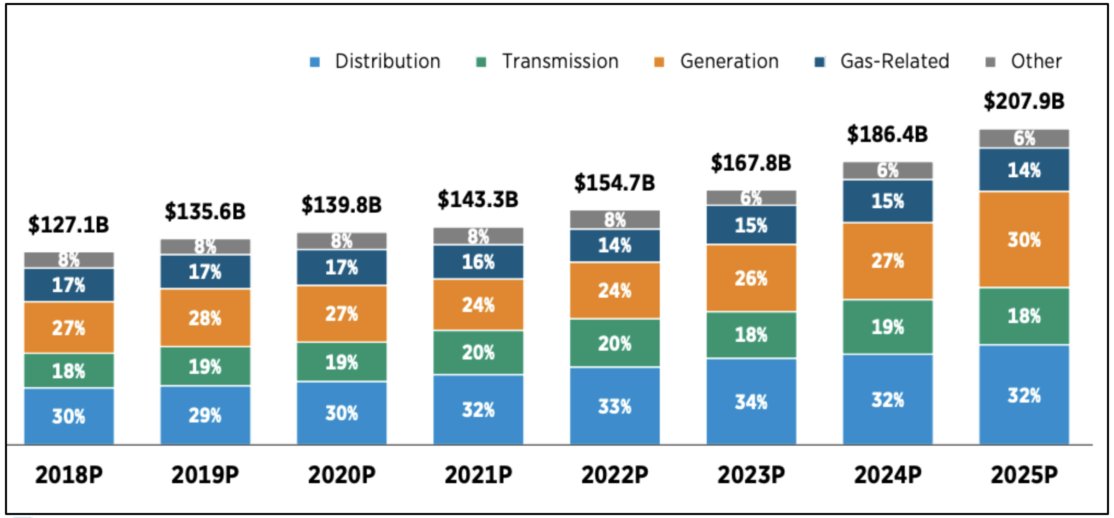
DERs are assets sited close to utility customers that can provide all or some of their immediate power needs and reduce demand or provide supply to satisfy the energy, capacity, or ancillary service needs of the distribution grid. While there are grid interconnection challenges, these resources can improve energy affordability and reliability for utility customers, increase consumer choice, and provide valuable services for electricity systems.

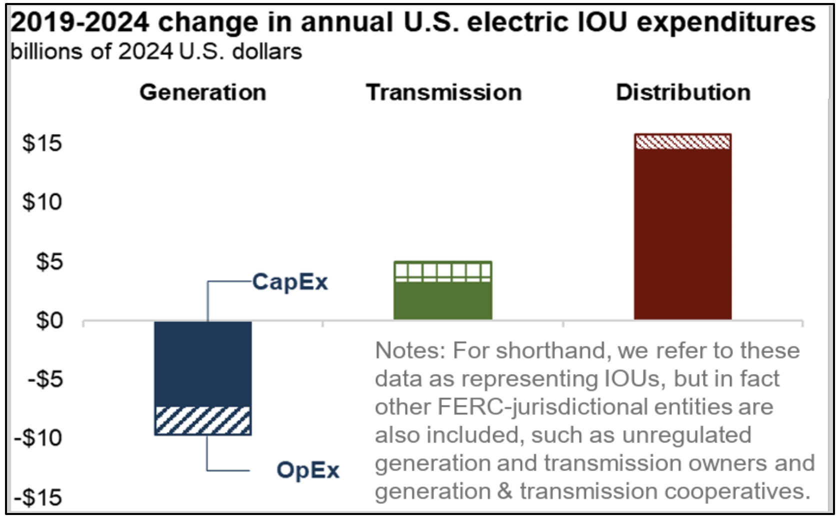
– NARUC, 2016; U.S. DOE, 2025

Source: McDonnell, Nelson, and Mims Frick, 2025

Drivers for Improving DER Interconnection Cost Allocation

- States are facing increasing grid constraints from high DER penetration in some locales, resulting in interconnection costs that hinder additional DER adoption.
  - New cost allocation approaches help to unlock grid constraints and minimize costs that interconnecting customers pay for future beneficiaries.
- Distribution system spending is increasing across the country to meet growing pressures associated with aging infrastructure, grid hardening needs, rapid load growth, and bi-directional power flow.
  - New cost allocation approaches tied to improved distribution system planning can help to reduce long-term overall distribution system costs.





Sources: EEI, 2025 and Wiser et al., 2025

Drivers – Examples

Vermont

"the application of the Commission's traditional cost-allocation method for interconnection costs can cause delays and uncertainty"

-Vermont PSC, 2019

Connecticut

"several substations already have little to no hosting capacity and the Authority expects that DER saturation will be a growing problem"

-CT PURA, 2025

Minnesota

"The Company continues to see these upgrade costs become more common, and, on the rise – averaging $4,000 per project, and in a few cases, reaching ten or more thousand dollars"

-Xcel Energy, 2022

(Docket No. E999/CI-16-521, filed 5/27)

DER Interconnection Cost Allocation Principles

Principles – Development

- Principles help regulators, utilities, and stakeholders agree on desired outcomes and guardrails, improve transparency in decision making, build shared understanding, and garner stakeholder trust.
  - Principles can help evaluate tradeoffs and effectiveness of potential changes to cost allocation.
- In addition to legal requirements and long-standing ratemaking principles, common state objectives for DER interconnection cost allocation include:
  - Serve state objectives and reduce obstacles to efficient DER interconnection
  - Beneficiary pays
  - Promote DER interconnection at strategic locations, such as those with low interconnection costs or that create broader ratepayer benefits.

Source: Pfeifenberger, 2024

Principles – State Examples

Massachusetts

- Beneficiary pays
- Sound development signals
- Cost efficiency

– Massachusetts Joint Utilities, 2025

Maryland

- Mitigate cost obstacles to interconnection
- Facilitate efficient utilization of existing available hosting capacity
- Balance the needs of DER developers, utilities, and ratepayers

– Maryland PC44 Interconnection Working Group, 2021

Connecticut

- Support the accelerated deployment of non-residential DERs
- Establish appropriate sharing of distribution system upgrade costs
- Maintain interconnection costs as price signals

– CT PURA, 2025

Example Guidelines

- Use transparent methods that are easily understood and based on the best available information
- Integrate DER interconnection cost allocation with a robust distribution planning process
- Reduce and appropriately share risk
- Support customer choice to adopt generation and storage technologies
- Facilitate grid reliability, energy affordability, and achievement of other established state objectives

Cost Allocation Approaches and Frameworks

Cost Allocation Approaches (1)

Approach	Who pays and how?	Example
Fixed Fee	Charge the same fee to all customers with a common characteristic(s)	The utility charges a fixed fee for interconnection of all small DER systems to fund shared upgrades.
Direct cost assignment	Allocate costs entirely to one customer	The utility directly assigns to the triggering DER project all costs incurred to accommodate the resource even if others may benefit from the upgrades in the future.
Pro-rata assignment	Charge costs proportionally based on use of shared distribution upgrades	Group studies often allocate costs to participating interconnection customers on a proportional, $/kW basis based on the cost of the upgrades (either individual upgrades or a portfolio of upgrades).

Cost Allocation Approaches (2)

Approach	Who pays and how?	Example
Use established rate case allocators	Rate-base costs following commission-approved requirement and cost allocator processes	Proactive approaches may allocate a percentage of upgrade costs to all ratepayers using established rate case allocators (e.g., division among rate classes).
Grid usage charges	Allocation of costs based on how the customer actually uses the grid	Export tariffs for customers that send excess energy to the distribution system use cost-of-service analysis to determine ongoing charges for shared distribution upgrades.
Locational Pricing	Allocation of costs based on the availability of distribution system hosting capacity	Interconnection customers not requiring a distribution upgrade pay a pro-rata $/kW fee based on available hosting capacity. The fee is lower in areas with ample available capacity and higher in areas with lower available capacity.

Cost Allocation and Recovery Frameworks

Additional factors to consider in cost allocation and recovery frameworks:

- **How are upgrade needs initiated and determined** – Is the need triggered by an interconnection request(s) (e.g., reactive), or identified proactively through a grid needs assessment?
- **Determination of beneficiaries** – What is causing costs to be incurred and who is benefiting from investments?
- **Which costs will be included** – What specific equipment is the utility installing or upgrading to accommodate DERs?
- **How and when to recover costs** – Will costs be recovered through interconnection customer fees, deferred accounting and base rates, riders, or ongoing bill charges, and over what time period?
- **Other considerations that may impact cost allocation and cost recovery** – Is the approach feasible and aligned with state objectives and established ratemaking principles?

Common Cost Allocation and Recovery Frameworks – Summary

- Cost-causer pays
- Reimburse initial interconnection customer over time
- Create a reserve fund
- Conduct group interconnection studies
- Pro-rata cost sharing
- Incorporate grid usage costs into tariffs
- Implement scarcity pricing
- Multi-beneficiary pays
- Establish cost caps
- Follow line extension cost allocation practices

Common Cost Allocation and Recovery Frameworks – Only Interconnection Customers Pay (1)

Common Cost Allocation and Recovery Frameworks	Description
Cost-causer pays	Directly assign all interconnection-related costs to the project that initially triggers distribution system upgrades
Reimburse initial interconnection customer over time	Directly assign all upgrade costs to the triggering project, then require subsequent interconnection customers to pay back the initial paying customer for use of shared equipment
Create a reserve fund	Collect a fee from all interconnecting customers to fund upgrades
Conduct group interconnection studies	Study multiple, related applicants as a group and allocate upgrade costs proportionally by project

Common Cost Allocation and Recovery Frameworks – Only Interconnection Customers Pay (2)

Common Cost Allocation and Recovery Frameworks	Description
Pro-rata cost sharing	Assign costs to interconnection customers on a proportional, pro-rata basis
Incorporate grid usage costs into tariffs	Apply ongoing charges for interconnected DERs that export energy to the distribution system
Implement scarcity pricing	Interconnection customers pay a proportional or fixed share of location-based prices that reflect hosting capacity availability

Common Cost Allocation and Recovery Frameworks – Interconnection Customers and Ratepayers Pay

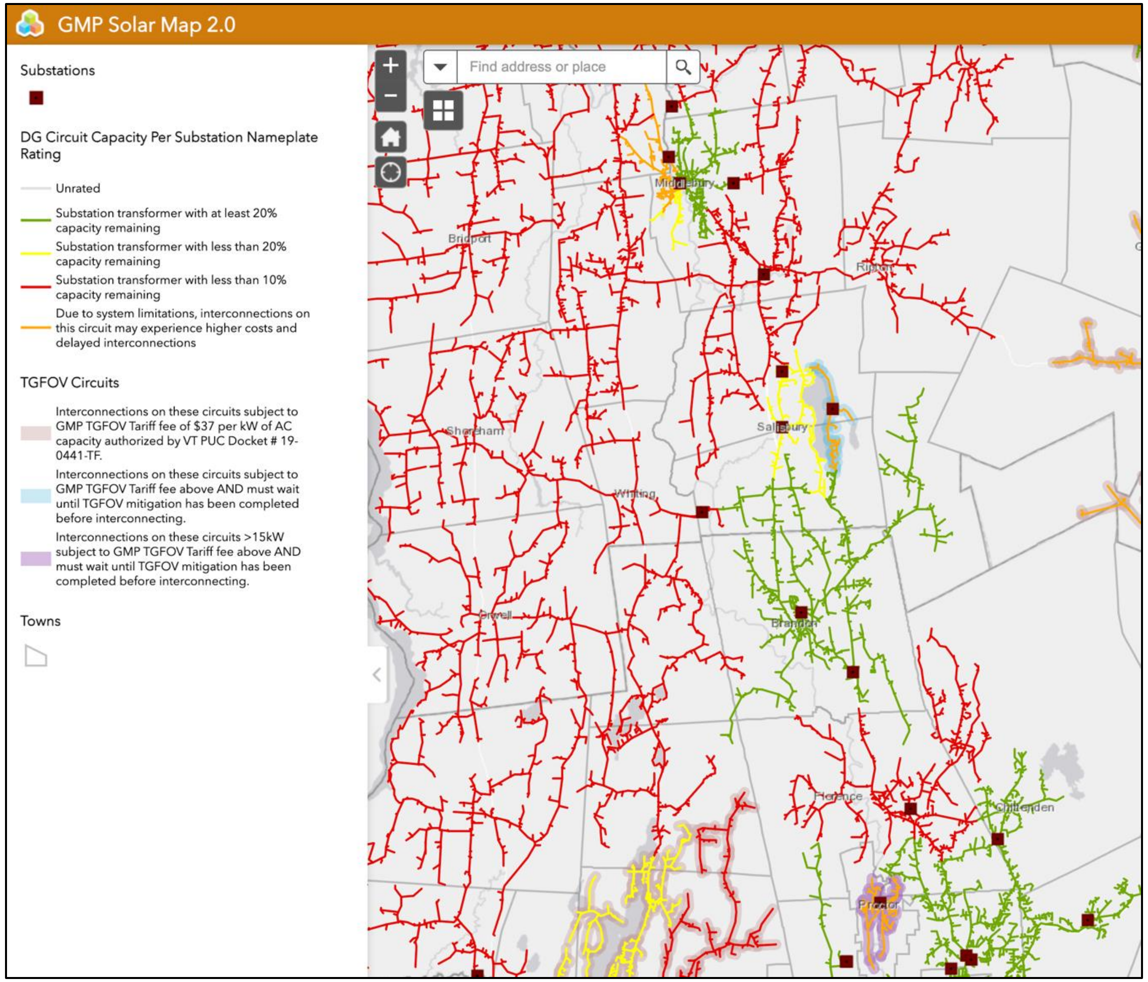
Common Cost Allocation and Recovery Frameworks	Description
Multi-beneficiary pays	Assign costs to both ratepayers and interconnection customers based on how each uses and benefits from upgrades
Establish cost caps	Establish maximum cost responsibilities (e.g., $/DER system) and recover remaining costs from ratepayers
Follow line extension cost allocation practices	Utilities cover a portion of distribution construction costs as an “allowance,” and DER customers pay for costs over the allowance

State Examples and Case Studies

Vermont – Create a Reserve Fund

- Green Mountain Power (GMP) funds transmission ground-fault overvoltage (TGFOV) mitigations with a standard fee on systems in affected areas.
    - Net-metering and small generation systems in TGFOV-constrained areas pay a $37/kW non-bypassable fee.
    - Mitigations would typically cost around $75,000—cost-prohibitive for individual projects.
    - GMP initially proactively identified 67 substations that required TGFOV mitigation.
- GMP identifies TGFOV areas on hosting capacity maps.

GMP TGFOV Fee Areas

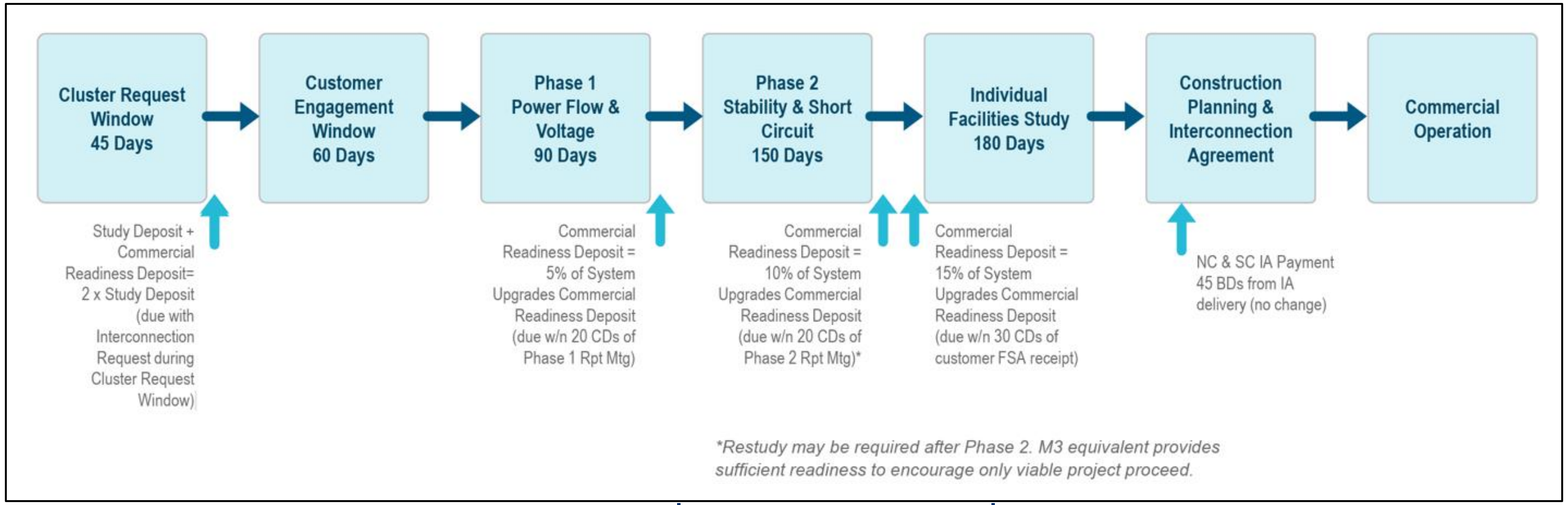


Sources: VT PSC, 2019; GMP, 2025

North Carolina – Conduct Group Interconnection Studies

- Duke Energy uses cluster studies in North Carolina and South Carolina for systems ≥250 kW that are covered by the state-jurisdictional interconnection process.
  - An annual enrollment window for cluster studies is open for 45 days. The utility then engages with participating customers, groups requests, and begins studies.
- Duke allocates costs to group members mostly using per-project and pro-rata assignment, depending on the type of cost.
- The process includes phased interconnection, which allows temporary non-firm (or flexible) service prior to completion of a full interconnection study or completion of the distribution upgrade.

Duke Energy Cluster Study Process



Source: Duke Energy, 2025

Massachusetts – Capital Investment Project Program

- The provisional Capital Investment Project (CIP) program addresses near-term grid needs for group study projects affected by high-cost upgrades.
- Ratepayers and interconnecting customers share costs based on benefits accrued.
  - Interconnection customers pay a pro-rata $/kW fee, calculated based on each project's use of the portion of the upgrade that serves larger DER projects.
  - The utility recovers the full upgrade costs from all distribution customers using rate class allocators over a specified time period and reimburses customers over time with CIP interconnection fees.
  - The DPU order approved a 20-year rate recovery period for CIP projects to reduce the risk to ratepayers because extended rate recovery period allows more time for CIP fees to offset ratepayer charges.

Eversource CIP Capacity Enablement

Group	# Substations	Existing DER (MW)	Study DER (MW)	Additional Enabled DG (MW)
Plainfield-Blandford	1	38	13	29
Plymouth	7	237	123	279
Cape	8	149	71	274
Marion-Fairhaven	4	69	49	102
Dartmouth-Westport	2	72	16	55
Total	22	565	272	739

Eversource Marion-Fairhaven CIP Fee

Project Type	DER Customer Benefit	Distribution Customer Reliability Benefit	Distribution Customer Capacity Benefit	Upgrade Cost
Distribution Substation	$38 M	$37 M	$17 M	$92 M
Distribution Line	$16 M	$5 M	$7 M	$27 M
Total:	$54 M			
CIP Fee:	**$385 /KW**			

Sources: Martinez, 2025; Eversource, 2022; MA DPU 2022

Massachusetts – Long-Term System Planning Proposal

- The DPU is considering a Long-Term System Planning Process to proactively accommodate future DER growth.
  - A long-term distributed generation (DG) assessment would identify timing, magnitude, and location of projected development to analyze future constraints and prioritize solutions.
- Costs would be split between distribution customers and interconnection customers based on identified benefits flowing to each group.
  - Large DG customers would pay a pro-rata "proactive hosting capacity fee" for interconnecting to infrastructure.
  - Costs would be recovered from large DG customers over a 20-year period with a possible extension if the fee area is not fully subscribed at that point.

Beneficiary Pays	• Includes both DER and end-use load customers • Covers customers interconnecting at different points in time
Sound Development Signals	• Encourages development where there is hosting capacity available • Reduces costs for certain flexible interconnections and co-optimization of resources to meet other system needs
Cost Efficiency	• Encourages efficient use of hosting capacity by deploying techniques like co-location with storage, technical de-rating, and dispatch-limiting schedules

Source: Joint Utilities, 2025

New York – Cost Sharing 1.0

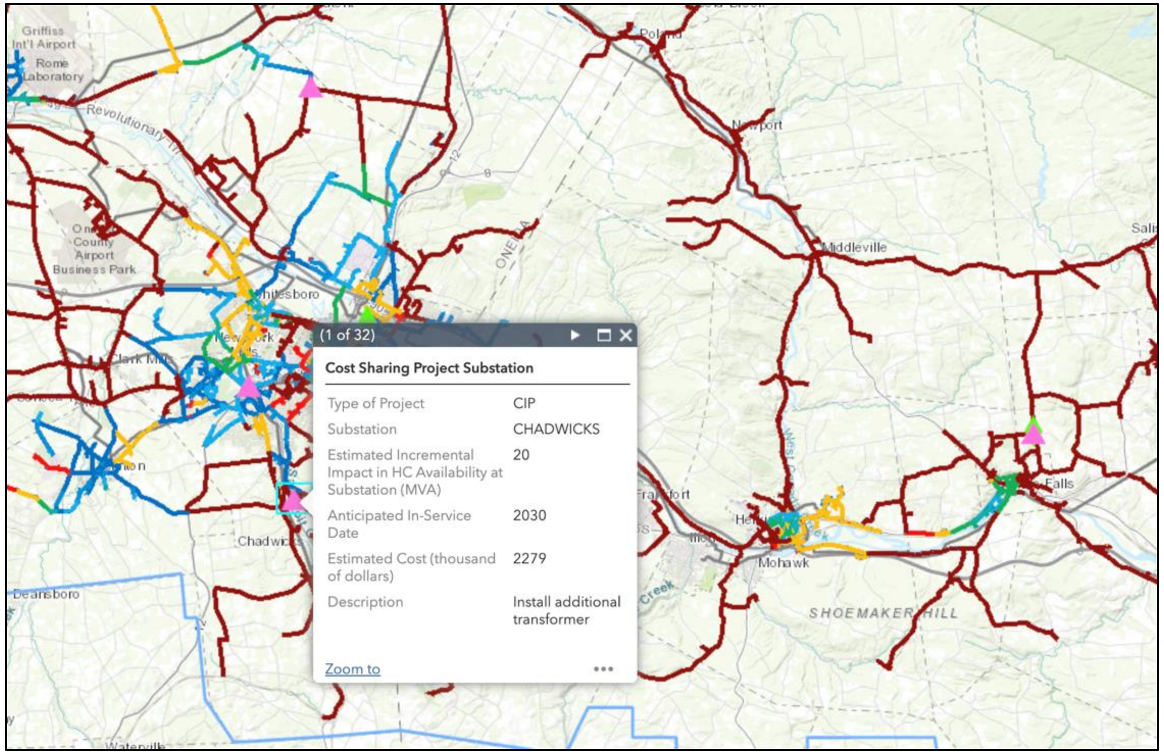
- Triggering project pays 100% of the upgrade cost
  - Subsequent interconnecting customers reimburse them through pro-rata payments ($/kW)
  - For each additional project that interconnects, the utility calculates a new cost per watt-served
  - The process continues until there is no capacity left or until the net costs to all participating customers is ≤$100,000, whichever comes first.
- The mechanism covers:
  - Substation 3VO – a neutral over-voltage protection mechanism that reduces negative impacts of reverse power flows on substation transformers
  - Substation transformer upgrades
  - Other substation-level shared upgrades >$250,000

Source: NY PSC, 2021, Order in Cases 20-E-0543 and 19-E-0566, filed July 16

New York – Cost Sharing 2.0

- Since 2022, cost allocation differs by the type of upgrade and how it was triggered.
  - Utility-initiated upgrades (multi-value distribution projects): Utilities add hosting capacity to planned projects
  - Market-initiated upgrades: Upgrades are triggered by specific interconnection requests
- Experience with this mechanism to date varies significantly by utility, for example:
  - Central Hudson Gas & Electric - No projects to date
  - National Grid - >800 MW of capacity, with ~1/2 of total costs collected from interconnection customers
- Upgrade costs not covered by interconnection customers go into a deferral account until the utility's next rate case, subject to a cost cap.

Example of National Grid New York's Hosting Capacity Map with Cost Sharing



Sources: NY PSC, 2025; National Grid, 2025

Australia – Export Tariffs

- Australia has high and growing DER penetration.
  - In response, stakeholders called for changes to the regulatory framework to better support utilities' provision of services for DER customer exports, allow DER customers to pay their share for required infrastructure, reduce the need for DER export limits and moratoriums, and optimize existing and future hosting capacity.
- Utilities are implementing export tariffs with ongoing charges on customer bills to pay for the cost of exporting energy from DERs to the utility's distribution grid.

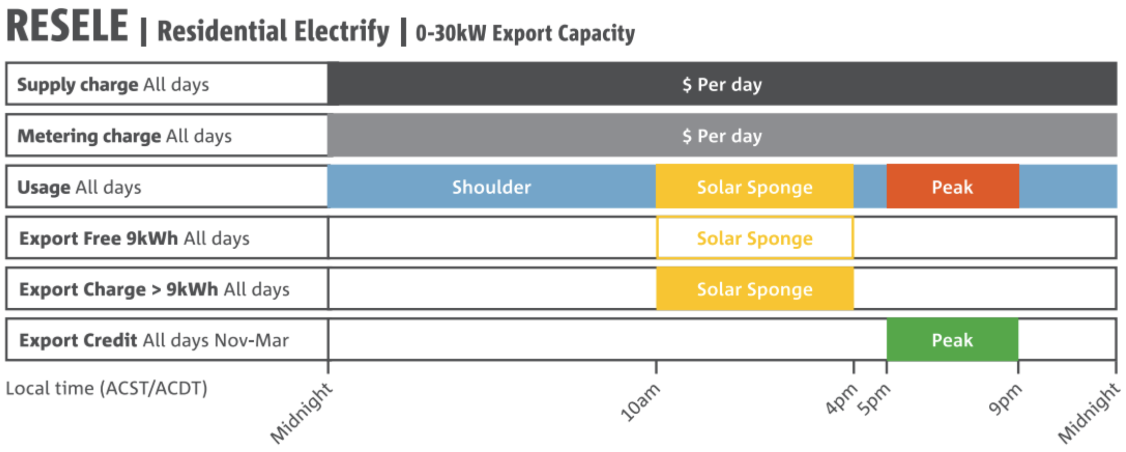
Illustrative Two-Way (Consumption and Export) Tariff

Residential two-way tariff	Time period	Charge per unit	Price per unit (cents)
Fixed charge	Daily	c/day	50.0
Peak consumption charge	4 pm – 9 pm	c/kWh	20.0
Shoulder consumption charge	9 pm – 10 am	c/kWh	5.0
Off-peak consumption charge (solar sponge)	10 am – 4 pm	c/kWh	1.5
Export peak rebate	4 pm – 9 pm	c/kWh	20.0
Export charge* applies to exports > 2 kWh/day (that is, the basic export level is 2 kWh/day).	10 am – 4 pm	c/kWh	1.5

Source: Australian Energy Regulator, 2024

Australia – South Australia Power Network Export Tariffs

- The South Australia Power Network established multiple export tariffs in 2025, following studies and implementing initial strategies to holistically serve export customers.
- Prices are based on long-run marginal costs, including:
  - *DER compliance costs* – improvements to the inverter standards and configuration compliance program
  - *Low voltage system management* – installation of low-voltage dynamic voltage control equipment
  - *Additional voltage management* – installation of voltage regulators in the sub-transmission network
  - *Hosting capacity costs* – new and upgraded transformers to increase export capacity in congested areas
  - *Costs for SCADA metering to feeders* – reverse power flow measurements



Key findings
The proposed export pricing signals are designed only for a portion of customers' export energy.
Customers would be neither advantaged nor disadvantaged because of their meter type.
The proposed export tariff structure benefits customers who could shift their network usage in response to price signals.
The proposed export pricing structure ensures that most customers pay below the average export charge.
The average export charge for those customers experiencing vulnerability is lower than the state average.
Export charges are cost reflective as customers with larger solar systems will likely pay more.
Most customers on the RESELE and SBELE tariffs are likely to have a higher export credit than the export charge.

Source: SAPN 2024

Maryland – Scarcity Cost Allocation Model

- The Maryland Cost Allocation Model creates higher fees in areas with less hosting capacity available to encourage efficient use of distribution systems.
- Interconnection customers that **trigger upgrades** pay a pro-rata ($/kW) fee.
  - Utilities may increase the size of the upgrade for forecasted DER growth.
- Customers that **do not trigger upgrades** pay a scarcity pro-rata fee.
  - Incremental upgrade costs are allocated among feeders with similar levels of hosting capacity — for example:
    - A project triggers a $1M upgrade and pays $250,000 to use 25% of the newly available hosting capacity.
    - The other $750,000 is divided equally across a group of feeders ($150,000 per feeder) and then divided by available hosting capacity at each feeder.
    - The table below shows how the remaining amount was allocated across a group of 5 feeders.

Feeder Name	Available HC	$/ kW
A	30 kW	$5.00
B	20 kW	$7.50
C	15 kW	$10.00
D	15 kW	$10.00
E	10 kW	$15.00

Source: MD PC44 Working Group, 2023

Wrap Up

Complementary Tactics

- Additional efforts are important to support effective cost allocation and overcome barriers to simple, fast, and affordable interconnection.
- Targeted tactics help protect customers by producing and using well-vetted data for comprehensive grid upgrade planning, reducing interconnection costs through efficient use of existing grid infrastructure, and improving regulatory oversight.

Interconnection process improvements	Integrated distribution system planning	Performance-Based Regulation (PRB)
• Cost transparency • Cost envelopes • Updated technical standards • Flexible interconnection • Reporting requirements	• Load and DER forecasting • Hosting capacity maps • Coordination of interconnection and distribution system planning	• PBR to support DER adoption and integration • Performance incentives/penalties for interconnection • Enable third parties to provide utility customers with DER products and services directly

Conclusions

- Adoption of community solar and associated high costs to mitigate grid constraints are major drivers for considering updates to cost allocation.
- A primary goal of allocating interconnection costs is maximizing economic efficiency while meeting state objectives.
- Adoption of a set of principles can help guide regulators, utilities, and stakeholders to identify the appropriate means to achieve desired outcomes without being overly prescriptive.
    - Effective working groups can improve the process by increasing understanding and trust among parties.
- States use various cost allocation approaches in concert with important implementation details that together make up cost allocation and recovery frameworks.
    - Each framework serves some objectives well and others less well.
- Jurisdictions throughout the country are testing new cost-sharing approaches, while other states are still in early stages of consideration.
- Complementary efforts are critically important, but do not supplant appropriate allocation of grid upgrade costs.

Thank you!

State Experiences

Panel Discussion - State Experiences with DER Interconnection Cost Allocation

State representatives will discuss:

- Drivers for addressing cost allocation
- Description of the cost allocation approach(es)
- Description of the process used to develop the approach
- Results and lessons learned

Exploring a Draft Cost Allocation Calculator Tool

Calculator Tool Audience and Use Cases

Why Consider Different Methodologies?

- Regulatory agencies may have upcoming or ongoing proceedings to improve DER interconnection.
- Decisionmakers may want to better understand how cost allocation methodologies in use today reflect cost-causation for distribution grid upgrades and consider the cost impacts to DER developers, owners, and aggregators ("DERs" hereafter) and ratepayers.
- Cost allocation affects achievement of various jurisdiction-specific goals, for example, areas with highly constrained grids may want to understand methodologies that can lower costs for additional DERs sited in locations where interconnection-related distribution upgrades are made.

Who Might Use This Tool?

- Parties engaged in relevant utility regulatory proceedings, such as representatives of DER owners, DER aggregators, utilities, state energy offices, and utility consumer advocates.
- Regulators considering proposed changes to tariffs or regulations.

What Can Users Do With This Tool?

- Compare the financial impacts of cost allocation on DER owners and ratepayers across multiple cost allocation methodologies.
- Explore the impacts of potential levers or implementation details within each methodology.
- Understand how results change when using jurisdiction-specific values.

Calculator Tool Objectives and Limitations

Key Objectives

- Support jurisdictions in assessing how a variety of methodologies that assess cost-causation and beneficiaries differently affect achievement of various cost allocation objectives
- Create illustrative, transparent, and adaptable analysis to support comparison of cost impacts to DER owners and ratepayers broadly across cost allocation methodologies

Guiding Questions

- Who pays for the distribution upgrades to support DER interconnection?
- What is the impact of these costs for the DER owner or future DER owners?
- What is the impact of these costs to ratepayers?
- How do these impacts affect achievement of various cost allocation objectives outlined in the report?

Model Outputs

- Annual and NPV DER owner cost impacts
- Annual and NPV ratepayer impacts

Key Limitations

- Uses simplified logic to compare results from different methodologies
- Provides the most useful results when users input jurisdiction-specific costs and other data
- Not a full cost-of-service model and does not replace cost of service or rate case processes

Next Steps

- Find all meeting materials at: https://www.naruc.org/core-sectors/energy-resources-and-the-environment/der-integration-compensation/distributed-energy-projects-interconnection-cohort/
- **Register for the July 29th meeting at**: https://naruc-org.zoom.us/webinar/register/WN_Xu_cWd5bRSSuHTTD_97Dow#/registration

Thank you!

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