



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

Equity and Energy Justice Solution e-Xchange
Collecting and Considering EEJ Feedback

Karyn Boenker, PNNL, 7/19/23

An initiative spearheaded by the Solar Energy Technologies Office and the Wind Energy Technologies Office

Meeting Notes

Notes synthesizing keys points, insights and questions from the meeting can be found here: [Box Link](#)

The first half of this Teams call is being recorded and may be posted on DOE's website or used internally. If you do not wish to have your voice recorded, please do not speak during the call. If you do not wish to have your image recorded, please turn off your camera or participate by phone. If you speak during the call or use a video connection, you are presumed consent to recording and use of your voice or image.

Virtual Meetings Code of Conduct

1. *Please introduce yourself with name, title, organization*
2. *Assume good faith and respect differences*
3. *Listen actively and respectfully*
4. *Use "Yes and" to build on others' ideas*
5. *Please self-edit and encourage others to speak up*
6. *Seek to learn from others*



Mutual Respect . Collaboration . Openness

Interconnection Innovation e-Xchange (i2X)

Mission: To enable a **simpler, faster, and fairer** interconnection of clean energy resources while enhancing the **reliability, resiliency, and security** of our **distribution and bulk-power electric grids**



Stakeholder Engagement

Nation-wide engagement platform and collaborative working groups



Data & Analytics

Collect and analyze interconnection data to inform solutions development



Strategic Roadmap

Create roadmap to inform interconnection process improvements



Technical Assistance

Leverage DOE laboratory expertise to support stakeholder roadmap implementation



Key Outcomes from i2X e-Xchange Meetings

- Inform and formulate a **publicly available, strategic roadmap** for interconnection
 - Topical challenges and issues
 - Practical solutions to implement and scale
 - Knowledge and data gaps and new solutions to pilot
 - Success goals and measures of success
- Summary documentation for each meeting regarding ideas discussed and opportunities for targeted stakeholder action
- Provide platform for ongoing engagement before and after meetings
- **Longer term vision** → Solution e-Xchanges to continue building a national forum for all stakeholders as a community of practice, excellence, and innovation



i2X Solution e-Xchange Topic Areas

- **Queue Management and Cost Allocation**
 - Technology, regulation, administration, and organizational change focus
 - *What* innovative interconnection solutions exist?
- **Grid Engineering Practices and Standards**
 - Engineering and technology focus
 - *How* can proposed solutions be executed?
- **Equity and Energy Justice**
 - Multidisciplinary
 - *Who* is impacted by and benefits from proposed solutions?
- **Data Transparency**
 - Multidisciplinary
 - *What* transparency concerns must be addressed?
- **Interconnection Workforce and Training**
 - Multidisciplinary

Additional subjects, like capacity maps, cross these topics and will be addressed from these different perspectives. Follow the schedule of events on the i2X website.



Upcoming 2023 Partner Events & i2X Presentations

- 7/16-20 IEEE PES General, Orlando, FL.
- 8/4 i2X-NERC EMT Bootcamp session #1 (NERC's EMTTF). 4hr virtual
- 8/15 IEEE 1547 Work Shop, Everett, WA **
- 9/14 i2X-NERC EMT Bootcamp session #2 (NERC's EMTTF). 4hr virtual
- 9/11-13 RE+ Workshop. Las Vegas, NV
- 10/3-4 ACP Offshore WINDPOWER. Boston MA
- 10/10-13 Clean Currents. Cincinnati, OH **
- 10/23-25 GridTECH Connect NE. Newport, RI
- 10/23-26 ESIG Fall Workshop. San Diego, CA **
- 11/8-9 IREC Vision Summit 2023. Minneapolis, MN

*** i2X is not currently set up to present at these events*

Agenda

- Summary of previous EEJ feedback
- Innovation Presentations
 - **Nicole Sitaraman**, Acting Director for FERC's Office of Public Participation
 - **Stephanie Chen**, founding member of CEC's Disadvantaged Communities Advisory Group and Director of Legislative Affairs at Marin Clean Energy
 - **Dana Clare Redden**, Founder of Solar Stewards
- Interactive Discussion

Summary of i2X EEJ Feedback

Shift towards equity considerations

- LBNL, 2023: "[Assessing the Current State of U.S. Energy Equity Regulation and Legislation](#)"
- PNNL, 2023: "[Advancing Energy Equity Considerations in Distribution Systems Planning](#)"

Summary of learnings from working with EEJ communities

- The importance of meeting people where they are, and recognizing that every community, neighborhood, and household is different
- The importance of tailoring analysis to specific circumstances/conditions, and the need to help utilities understand community perspectives
- Many communities have existing leadership and are proactively interested in pursuing an energy transition. Partnering with these communities to support and advocate for their goals has led to success.

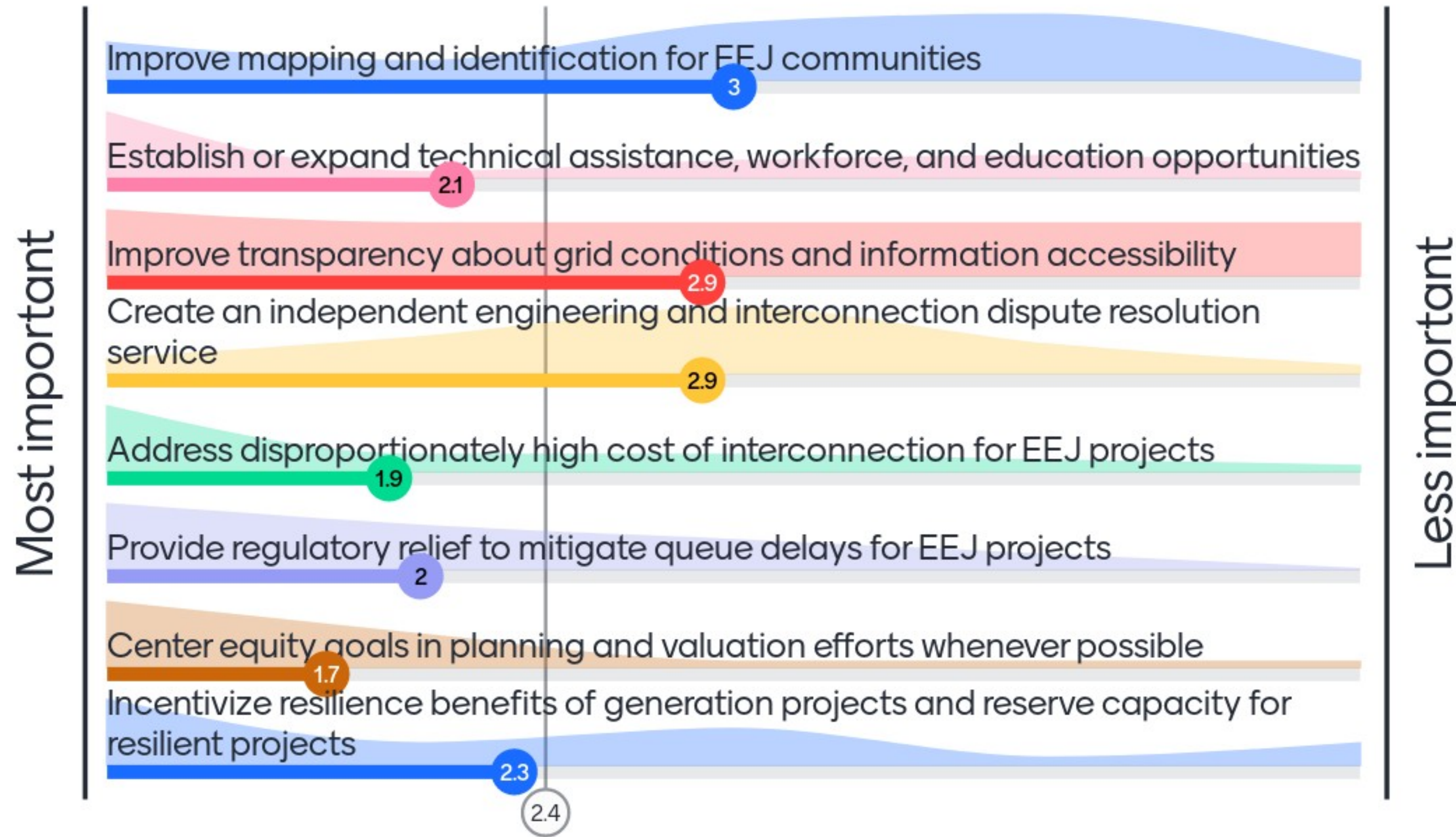
Summary of noted EEJ interconnection solutions

- Improve mapping and identification for EEJ communities
- Establish or expand technical assistance, workforce, and education opportunities
- Improve transparency about grid conditions and information accessibility
- Create an independent engineering and interconnection dispute resolution service
- Address disproportionately high cost of interconnection for EEJ projects
- Provide regulatory relief to mitigate queue delays for EEJ projects
- Center equity goals in planning and valuation efforts whenever possible
- Incentivize resilience benefits of generation projects and reserve capacity for resilient projects

Instructions

Your answers will appear ANONYMOUS to other participants. Only i2X leaders will see your contact information.

Please rank the following solutions from most to less important.



What metrics and outcomes should i2X track over the coming years?

22 Responses

of withdrawals from the interconnection queue # of re-studies performed in the interconnection queue

Energy burden reductions

Whether IX queues have been reduced.

I am NOT concerned about free riders. Most important to get projects out there and any successful project is a win for the climate.

Put \$ value on Justice40 investments from BIL and IRA.

Costs and time from application to commercial operation date

Timelines, cost of interconnection upgrades, area study delays

We should track how much federal money has been used to develop or improve grid infrastructure in disadvantaged communities.

Not concerned about free riders. Must prioritize EEJ projects that serve disadvantaged communities or have the potential to replace power plants located in those communities.



What metrics and outcomes should i2X track over the coming years?

22 Responses

Rate of adoption of new technologies in LMI communities

i2X should track the access to clean energy programs for people of color and other equity-seeking groups.

Time projects sit in interconnection queue

Track queue drop outs so minority developers can be prioritized for re-entry.

ix costs and timing for projects benefiting EEJ communities

i2X should look at success for IJJA: are the IJJA corridors sited in equity-seeking communities? Do those communities share in benefits and revenues?

Track outage data in equity-seeking communities. Is reliability equitably distributed?

identify why rates of adoption differ by income and how to fix that so that the technology is more accessible to low income communities

Post-study transmission queue dropout rate, transmission queue depth, rate of renewable generation capacity growth, interconnect application to final approval duration

What metrics and outcomes should i2X track over the coming years?

22 Responses

Improved grid resilience in EEJ communities

solar, solar+storage, EVs, ccHP deployment in equity-seeking communities

Health impacts on EEJ communities as related to displacing conventional power plants

How many community solar projects targeted to be hosted within the DAC were not economically feasible because of grid upgrade requirements?





Guest Presentations

EEJ Solutions	Average (1 = most important, 5 = less important)
Center equity goals in planning and valuation efforts whenever possible	1.7
Address disproportionately high cost of interconnection for EEJ projects (cost allocation)	1.9
Provide regulatory relief to mitigate queue delays for EEJ projects (queue mgmt)	2.0
Establish or expand technical assistance, workforce, and education opportunities	2.1
Incentivize resilience benefits of generation projects and reserve capacity for resilient projects	2.3
Create an independent engineering and interconnection dispute resolution service	2.9
Improve transparency about grid conditions and information accessibility	2.9
Improve mapping and identification for EEJ communities	3.0

Icebreaker Results

How? Who? Why? Center equity goals in planning and valuation efforts whenever possible.

9 Responses

Incorporate into FOA scoring

Federal consultation with Tribes required

Mechanisms to fast-track EEJ projects that achieve certain goals (i.e. displacing reliance on fossil fuels, improving resiliency, reducing asthma impacts locally, etc)

Federal Government has to weigh in on this. Help incentivize the market to build in areas that have traditionally been left out.

In engaging with the community through educating community leaders that can translate technical goals to what community members can understand

FERC, SPP and MISO have suggested eliminating queue altogether. Agreed! Have to ensure "business ready" standards as an alternative are fair to Tribes, small developers

Why - A 200 MW project deployed by an EJ org that benefits that EJ community is more valuable than the avg 200 MW project and should be prioritized
How - define 'EJ org' or community and track that

Redress of systemic oppression with opportunities to leapfrog to state of the art 'smart grid' applications

I second the idea of offering accredited/recognizable certs and programs!

How? Who? Why? Address disproportionately high cost of interconnection for EEJ projects.

5 Responses

Identify what parts of the process create the most financial burden and focus on those specifically.

How: Allow Federal money to be allocated to incentivize Utilities to invest in EEJ projects and DERS in LMI neighborhoods. Carrot, not stick.

EEJ communities have been 'paying' for the impacts from the legacy fossil fuel plants already benefitting off the existing grid; now they have to pay to upgrade it to replace those with clean energy?

Strong support for the "polluter pays" model referred to in an earlier comment - this is a restitution issue

Socialize these costs by levying grid access fees/retrospective interconnection costs onto incumbent generators, at higher rates for thermal units.

How? Who? Why? Provide regulatory relief to mitigate queue delays for EEJ projects.

2 Responses

Create a minimum requirement: RTO must successfully process 80% (by MW) of EEJ-designated projects in each queue cycle

How: Having an automated IX system that would "tag" an EEJ project, it's size and where it is. System could ID these projects to "leapfrog" others because of their use of automation, like SolarAPP+

How? Who? Why? Establish or expand technical assistance, workforce, and education opportunities.

6 Responses

Free registration (potentially even paid) for any training opportunities for low-income/EEJ persons who are interested!

Perhaps by offering government-sponsored/approved online courses and certificates. Offering it online would help to scale a lot.

Public contact list of HBCu and Tribal college instructors interested in clean energy

How: when installations go up in an EEJ area, host a workforce development training onsite. Show the wide variety of professional pathways into government positions (permitting, inspections, etc.)

Offer funded technical assistance/consultation for EEJ communities with great ideas - reduce up-front barrier to entry

I second having accredited/accessible/widely recognizable certifications

How? Who? Why? Incentivize resilience benefits of generation projects and reserve capacity for resilient projects.

5 Responses

Incorporate into LCOE models

Provide federal subsidies for storage solutions for solar deployments to disadvantaged communities.

All projects should have resiliency (the ability to bounce-back from a grid disturbance) built-in. Capabilities such as black-start, ride-through, etc, should be ubiquitous.

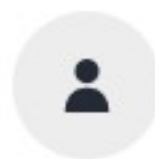
Recognition of the under investment of the distribution grid in EEJ communities due to redlining etc.. should make the DER interconnection more valuable to the grid in EEJ communities

Show the Utilities a new way to make money. There has to be a financial incentive otherwise they won't prioritize these types of innovative projects.

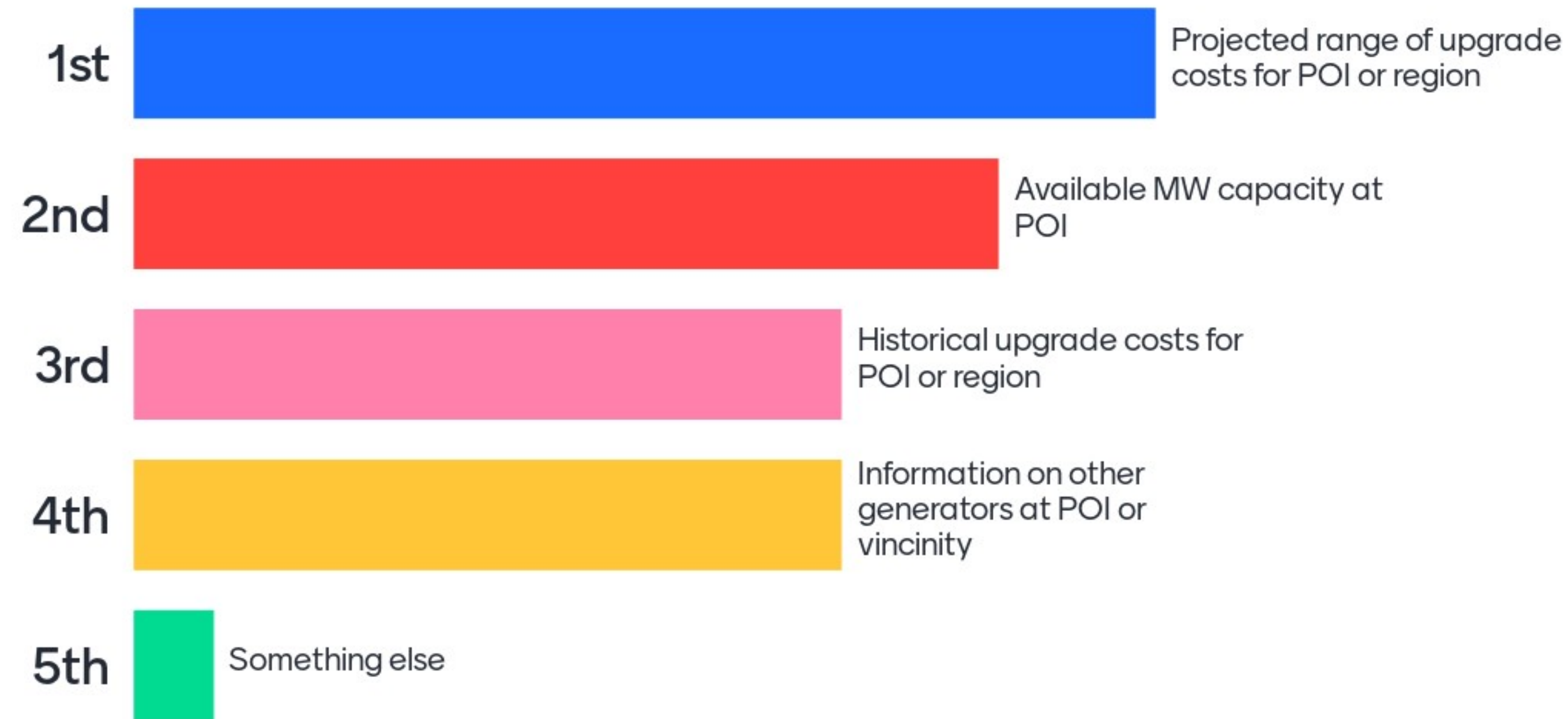
How? Who? Why? Create an independent engineering and interconnection dispute resolution service.



How? Who? Why? Improve transparency about grid conditions and information accessibility.



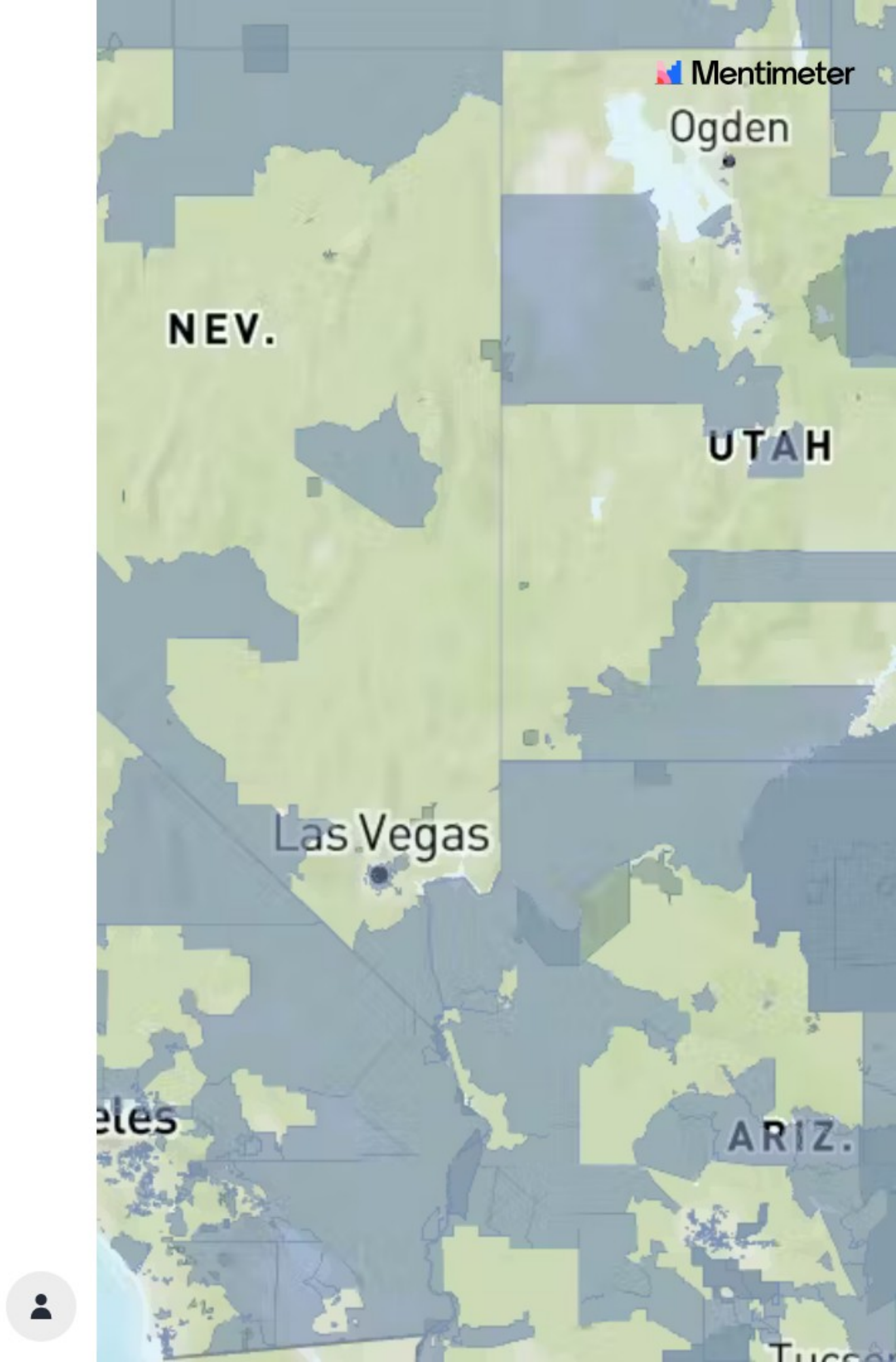
The following IX data is often not available. If it was, which would be most important?



If something else, what data is most important to you?



How? Who? Why? Improve mapping and identification for EEJ communities.



What kind of IX improvements could be made today, without regulatory or legislative direction?



What kind of EEJ considerations could require regulatory or legislative direction at the state or federal level?





FERC Office of Public Participation

Nicole Sitaraman, Acting Director

i2X Solution e-Xchange-Equity and Energy Justice: Collecting and Considering Feedback in Public Policy – July 19, 2023



Disclaimer

The views expressed herein are my own, and do not necessarily reflect the views of the Federal Energy Regulatory Commission, individual Commissioners, or other Commission or OPP staff members. Nothing herein should be viewed as a prediction of how the Commission will act on any matter.



Creation of the Office of Public Participation (1978 – 2021)

Enabling Statute: Section 319 of the Federal Power Act, 16 U.S.C. § 825q-1.

This section of the statute was added in 1978 but OPP was established in 2021.

Specific authority:

- The Director shall coordinate assistance to the public with respect to authorities exercised by the Commission.
- The Director shall also coordinate assistance available to persons intervening or participating or proposing to intervene or participate in proceedings before the Commission.

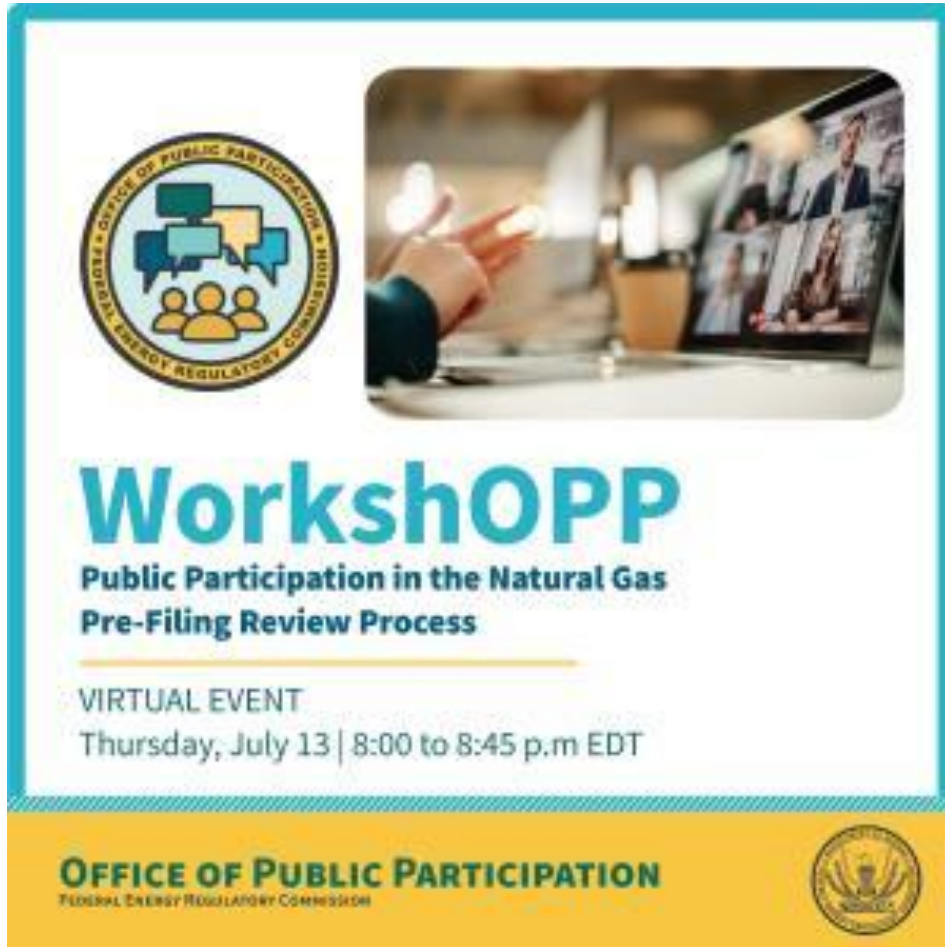


OPP Mission: To empower, promote, and support public voices at the Federal Energy Regulatory Commission

- Engage with the public through direct outreach and education
- Public liaison for procedural information
- Coordinates with other FERC offices to improve responsiveness to the public



What are OPP's Priorities?



The poster features the Office of Public Participation logo on the left, which includes icons of speech bubbles and people. To the right is a photograph of a hand pointing at a laptop screen displaying a video conference. The main text reads 'WorkshOPP' in large blue letters, followed by 'Public Participation in the Natural Gas Pre-Filing Review Process'. Below this, it states 'VIRTUAL EVENT' and 'Thursday, July 13 | 8:00 to 8:45 p.m EDT'. The bottom of the poster has a yellow background with the text 'OFFICE OF PUBLIC PARTICIPATION' and 'FEDERAL ENERGY REGULATORY COMMISSION' next to the FERC seal.

Constituent Support

Outreach

Education & Technical Assistance

Communications

Metrics of Success

Collaboration with FERC leadership and staff



Who are OPP's Constituents?

- Pursuant to a FERC report submitted to Congress in June 2021 which reflected substantial public comment during the OPP formation process, OPP has targeted its outreach to:

- **Environmental Justice Communities**
- **Tribal Citizens and NGOs**
- **Landowners**
- **Consumer Advocates**
- **Environmental Advocates**

- However, OPP has also consistently engaged with:

- **State and local officials**
- **Academia and think tanks**
- **Small, community-based energy business groups**
- **Large energy industry groups**



OPP is Designed to Facilitate Participation, Not to be an Advocacy Office

- OPP is not the FERC version of a state consumer advocacy office.
 - No interventions in or appeals of FERC proceedings.
- OPP may opine in internal FERC policy discussions impacting public participation and as to system changes (such as the software systems that enable comments, intervention, and information access), but not in contested proceedings.
- We are developing resources and educational materials to enable members of the public, including under-represented constituencies and those unfamiliar with FERC processes, to participate and bring **their voices** forward at FERC.



Sample List of OPP Inquiries



- Concerns about possible LNG facility or gas pipeline in their community
- Landowner calls on property restoration issues
- Requests for guidance on filings intervention/rehearing/comment
- Jurisdiction questions or non-jurisdictional items (ability to pay bills, local utility wants to site X, state energy programs, etc.)
- Interconnection challenges

OPP is Bringing FERC to People and People to FERC

- IEI Tribal Energy Equity Summit, St. Paul, MN
- Scoping Meeting in Rainbow City, AL
- FERC Commissioner-led Environmental Justice Visit in Port Arthur, TX and Lake Charles, LA
- FERC New England Winter Gas-Electric Forum
- OPP-led Environmental Justice Visit in New Orleans, LA and Plaquemines Parish, LA
- Public Comment Meetings in Petersburg/Chesapeake/Emporia, VA





Email: OPP@ferc.gov | Phone: (202) 502-6595

Twitter: [@FERC_OPP](https://twitter.com/FERC_OPP)

IG: [@ferc_opp](https://www.instagram.com/ferc_opp)

FB: <https://www.facebook.com/OPP.FERC>





California's Disadvantaged Communities Advisory Group (DACAG)

Stephanie Chen, Founding Member

California's DACAG - Formation

- Created by statute in 2015 (SB 350)
- Advise the CA PUC and Energy Commission
- Representatives from identified communities:
 - Environmental Justice
 - Tribal
 - Low Income Communities and Customers

DACAG Equity Framework

Broadly applicable energy and non-energy principles:

- Health & Safety
- Access & Education
- Financial Benefits
- Economic Development
- Consumer Protection

Recommendations & Lessons Learned

- Grasstops expertise
- Grassroots expertise
- Investing in grassroots expertise
- Translation and implementation



i2x

Solution e-Xchanges

Collecting and Considering
Equity and Energy Justice
Feedback

July 19, 2023

Solar Stewards leverages the investment of the private sector in renewable energy to fund equitable climate action and restorative justice.

Who We Are

A Social Enterprise Based in Atlanta, GA

Solar Stewards creates opportunities for sustainable change in renewable markets through facilitating the partnership between private-sector leaders and local community-serving organizations.



JUSTICE
40



Nasdaq
Entrepreneurial Center



neuac
NATIONAL ENERGY AND UTILITY AFFORDABILITY COALITION



BOSS
Black Owners of Solar Services

CEBA
Clean Energy Buyers Association

The mission of Solar Stewards is to help foster equitable energy transition within the energy sector through climate action and restorative justice.

Climate Action + Environmental Justice

Solar Stewards creates the opportunity for an equitable energy transition in helping corporations purchase Social RECs™ from Community Partners, suppliers of green energy that have a beneficial impact in the local community.

What is an Historically Excluded Community?

Historically excluded communities have experienced systemic oppression and the denial of societal privileges, thus resulting in social, educational, and economic disadvantages.

Giant Methane Leak Tops List of Worst US Climate Disasters in 2022

The 13-day release from an Equitrans storage well effectively erased the emissions gains from about half the EVs sold in the US last year



The Equitrans well in Pennsylvania. Source: Pennsylvania Department of Environmental Protection

By [Aaron Clark](#)
December 13, 2022 at 6:00 AM EST

While diplomats in Sharm El-Sheikh were hammering out a historic agreement last month to help developing nations cope with the crippling consequences of a warmer planet, one of the biggest US climate disasters in recent years was unfolding in a rural corner of Pennsylvania.

What are Renewable Energy Credits?

“A Renewable Energy Credit is a market-based instrument that represents the property rights to the environmental, social, and other non-power attributes of renewable electricity generation”

United States Environmental Protection Agency



Solar produces both renewable energy and RECs

RECs are registered on a registry to ensure authenticity

RECs can be sold to corporates or utilities

The revenue from the sale of the RECs is realized

The owner of a solar system, or any renewable source, can receive one Renewable Energy Credit (REC) for every 1,000 kilowatt-hours (kWh) or 1-megawatt hour (MWh) of solar electricity produced by their system.

That credit or certificate can then be registered and sold – generating additional revenue for the system owner, or in the case of Social RECs™, directly to our Community Partners.

Social RECs™

Renewable Energy Credits with Social Impact



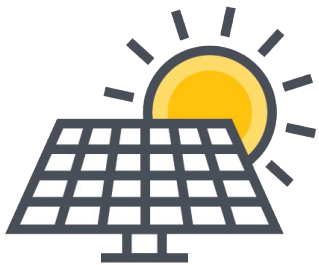
The Key to Equitable Climate Action

Through Solar Stewards Program, our **Climate Stewards**, or renewable energy buyers, have the distinct opportunity to source renewable energy credits (RECs) from organizations and projects that directly benefit historically excluded communities, and those on the front lines of climate change.

- Registered, purchased, and retired like traditional RECs
- Visible branding, community relations, and marketing value
- Meets multiple Corporate Social Responsibility (CSR), Environmental Social Governance (ESG), and Diversity Equity Inclusion (DEI) goals
- Speaks to multiple UN Sustainable Development Goals
- Economic and environmental impact of clean, affordable solar power lasts for generations
- Exclusively available in the Solar Stewards Marketplace

How Social RECs™ Work

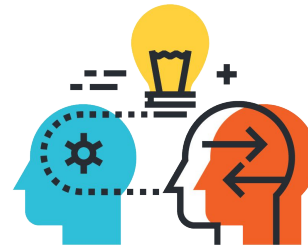
Through our unique model, we combine both environmental and social attributes to help committed private-sector leaders make strategic clean energy commitments that also directly benefit historically excluded communities and those most vulnerable to climate change.



TIER ONE

BASIC ACCESS

Social RECs™ are priced at a rate and term that allows a stalled or economically challenged project in an historically excluded community to be realized.



TIER TWO

COMMUNITY VALUE

Social REC revenue allows for the value stacking of social benefits such as workforce training, STEAM curriculum, and storage-ready applications.



TIER THREE

RESTORATIVE JUSTICE

Utilizing existing equity metrics, Social REC revenue addresses damages incurred by generations of systemic oppression, and the costs of climate mitigation.

Community Benefit Agreements

Solar Stewards connects organizations fostering equity in their local communities and those involved in the deployment of renewable energy to capture **community-led impact initiatives**.

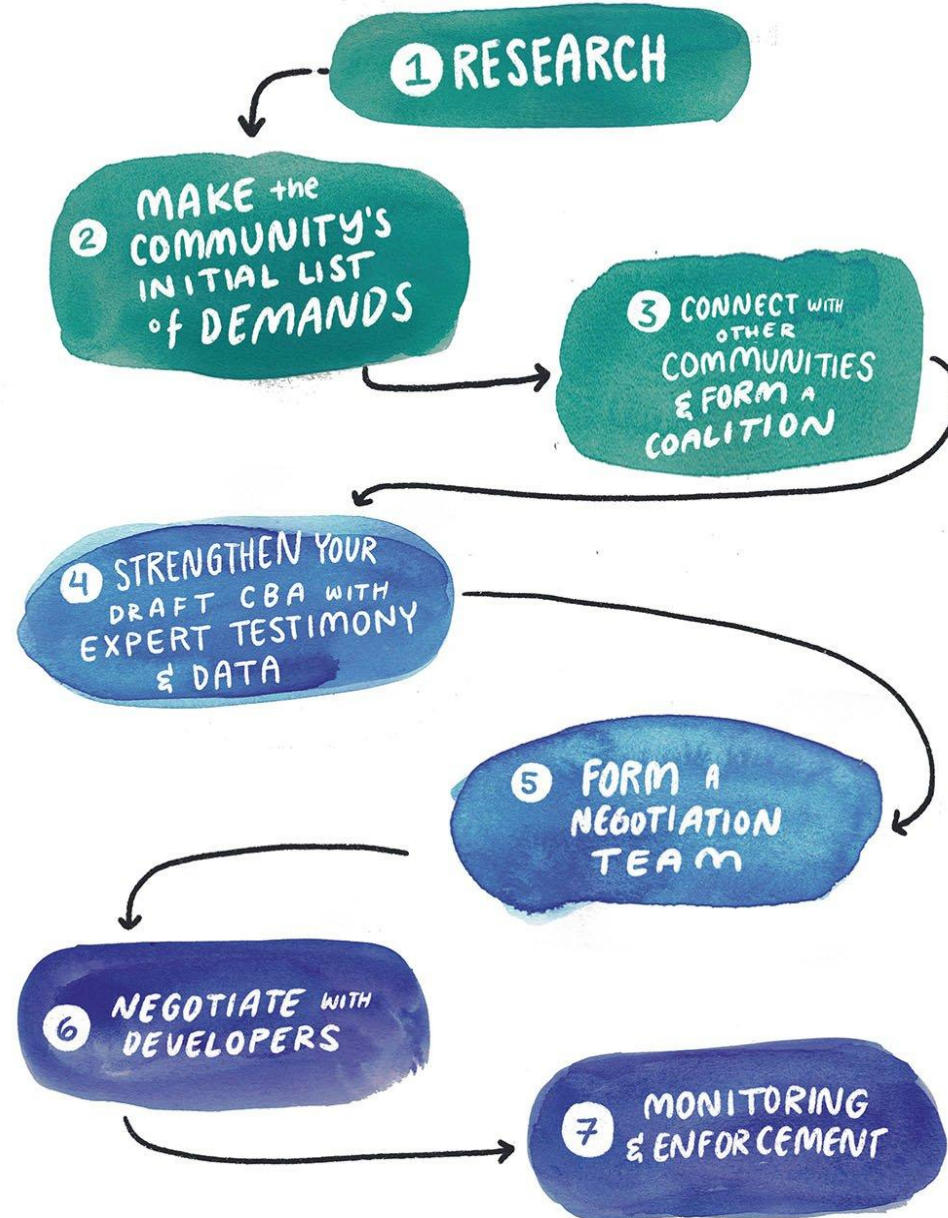
A **CBA** is a legally enforceable contract between the developer of a proposed project and the residents of that community



These community determined social impact initiatives are then used to craft a Community Benefit Agreement.

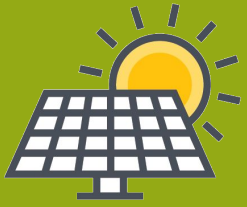
Solar Stewards administers this CBA process.

STEPS TO MAKING A CBA



JOIN US!

- Green banks
- Workforce development providers
- Distributed generation solar developers
- Minority businesses
- Women owned businesses
- Educators
- Affordable housing developers
- Non-profits, NGOs and Social enterprise

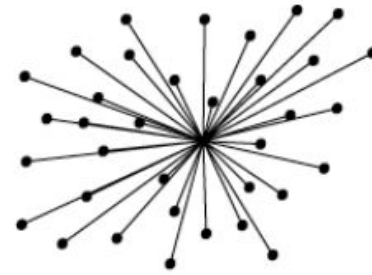


Creating an Inclusive Future

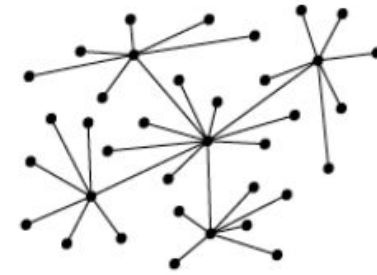
Ingrained in Solar Stewards is a dynamic approach to equity that solves not only for the injustices of the past, but the opportunities of the future.

Distributed energy resources (DERs) provide an opportunity for traditionally marginalized communities to leap-frog into the future of energy and grid services.

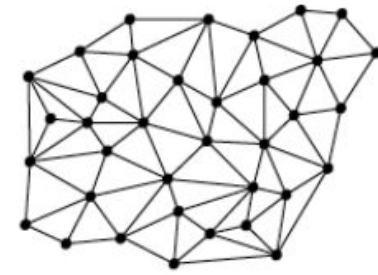
With FERC Order 2222, the Federal Energy Regulatory Commission (FERC) signaled to the marketplace the importance of DERs within the broader grid infrastructure. Solar Stewards is working to ensure these “smart” assets are developed and are serving historically excluded communities with the capability to interact with grid networks, producing resiliency and opportunities for additional revenue streams.



centralised



decentralised



distributed

FERC Order No. 2222: A New Day for Distributed Energy Resources

FERC Order No. 2222 will help usher in the electric grid of the future and promote competition in electric markets by removing the barriers preventing distributed energy resources (DERs) from competing on a level playing field in the organized capacity, energy and ancillary services markets run by regional grid operators.

What are distributed energy resources?

DERs are small-scale power generation or storage technologies (typically from 1 kW to 10,000 kW) that can provide an alternative to or an enhancement of the traditional electric power system. These can be located on an electric utility’s distribution system, a subsystem of the utility’s distribution system or behind a customer meter. They may include electric storage, intermittent generation, distributed generation, demand response, energy efficiency, thermal storage or electric vehicles and their charging equipment.

What does Order No. 2222 do?

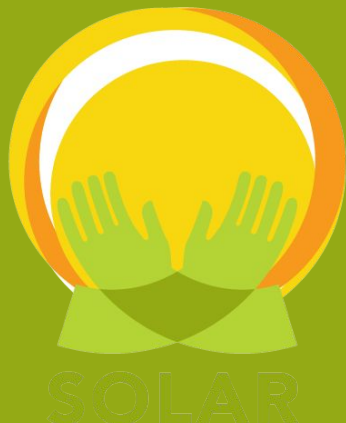
This rule enables DERs to participate alongside traditional resources in the regional organized wholesale markets through aggregations, opening U.S. organized wholesale markets to new sources of energy and grid services. It will help provide a variety of benefits including: lower costs for consumers through enhanced competition, more grid flexibility and resilience, and more innovation within the electric power industry.

This rule allows several sources of distributed electricity to aggregate in order to satisfy minimum size and performance requirements that each may not be able to meet individually.



Connect with Us

Solar Energy for Social Good



For further information on any aspects of the

Solar Stewards Program please contact:

Dana Clare Redden

Founder, CEO

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www.solarstewards.net



Thank You

Solar Energy for Social Good