



# Grid Resilience Formula Grant Metrics Guidance

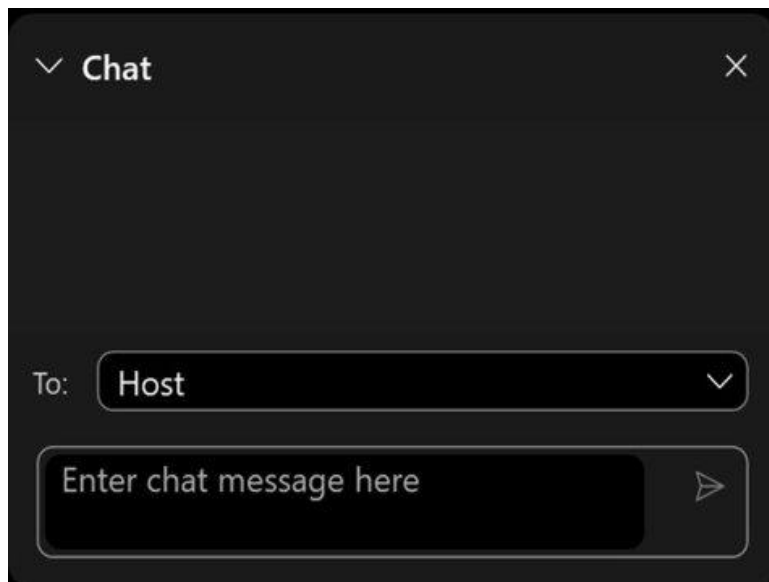
US Department of Energy  
September 19, 2023



# Housekeeping

## Questions?

If you have technical questions – please put them in the chat box for the host.



A screenshot of a chat window. The window has a dark background and a title bar that says "Chat" with a close button (X) on the right. Below the title bar, there is a "To:" field with a dropdown menu showing "Host". Below that is a text input field with the placeholder text "Enter chat message here" and a send button (paper plane icon) on the right.



# Speakers

## **David Parsons**

Program Manager,  
State and Tribal Assistance Programs  
Grid Deployment Office

## **Angelena Bohman, Ph.D.**

Technical Analyst,  
State and Tribal Assistance Programs  
Grid Deployment Office

# Agenda

Overview of GDO and the Grid Resilience Formula Grant

Background and Motivation for Reporting Design

Examples of Project Reporting

Q&A



# Grid Deployment Office Funding

## Power Generation

**Civil Nuclear Credit Program:**  
\$6 billion

**Hydroelectric Incentives:**  
More than \$700 million

**Wholesale Markets**

## Transmission

**Transmission Facilitation Program:**  
\$2.5 billion

**Transmission Facility Financing:**  
\$2 billion

**Transmission Siting and Economic  
Development Grants**  
\$760 million

**National Transmission Planning and Needs  
Studies; Offshore Wind Convenings**

**National Interest Electric Transmission  
Corridor (NIETC) Designation Process**

**Coordinated Interagency Transmission  
Authorizations and Permits (CITAP) Program**

## Grid Modernization

**Grid Resilience State and  
Tribal Formula Grants:**  
\$2.3 billion

**Grid Resilience and Innovation  
Partnerships (GRIP) Program:**  
\$10.5 billion

**Puerto Rico Energy Resilience  
Fund: \$1 billion**

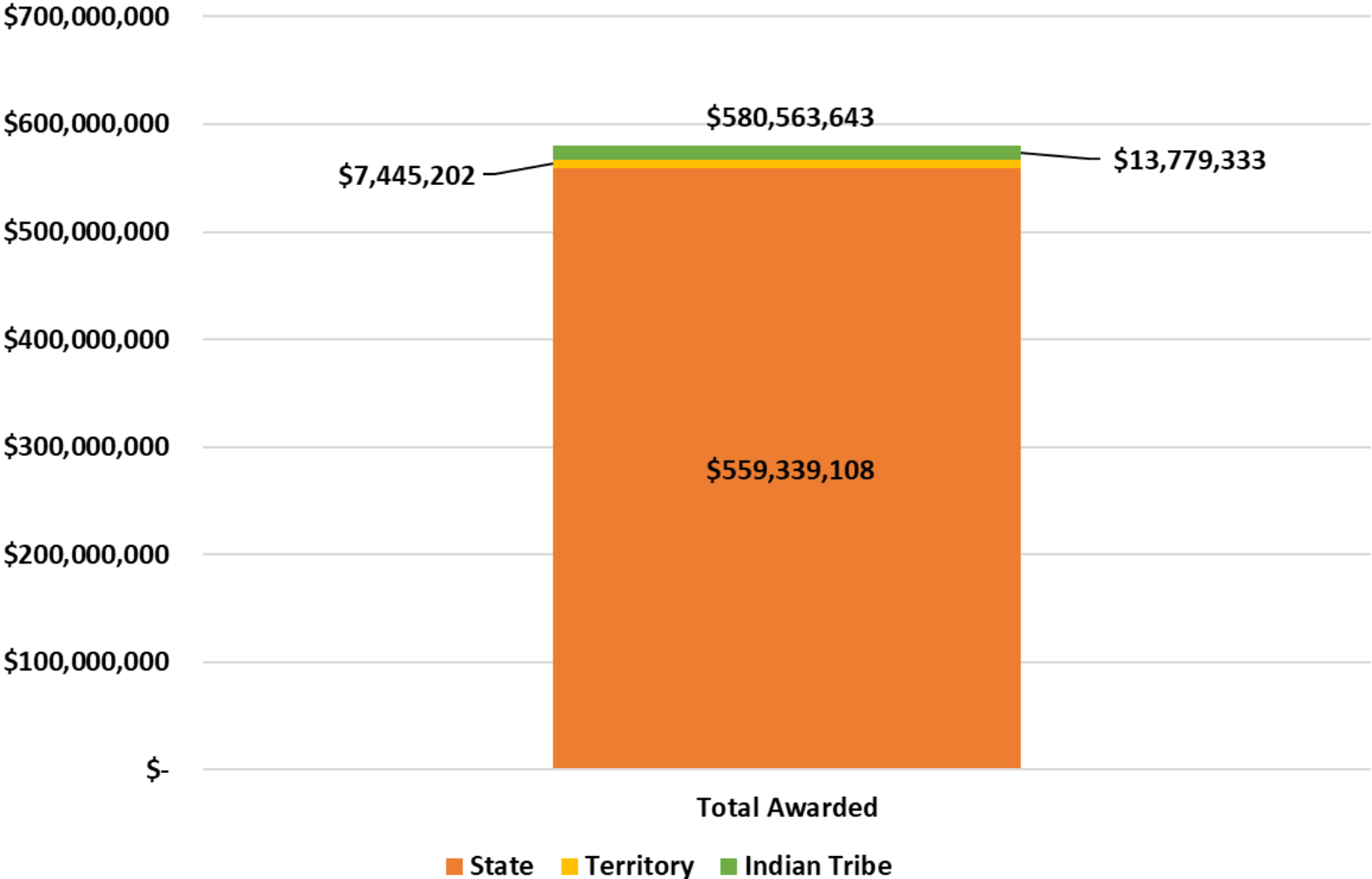
**Territory Recovery Assistance**

Annual Appropriations - \$65 million

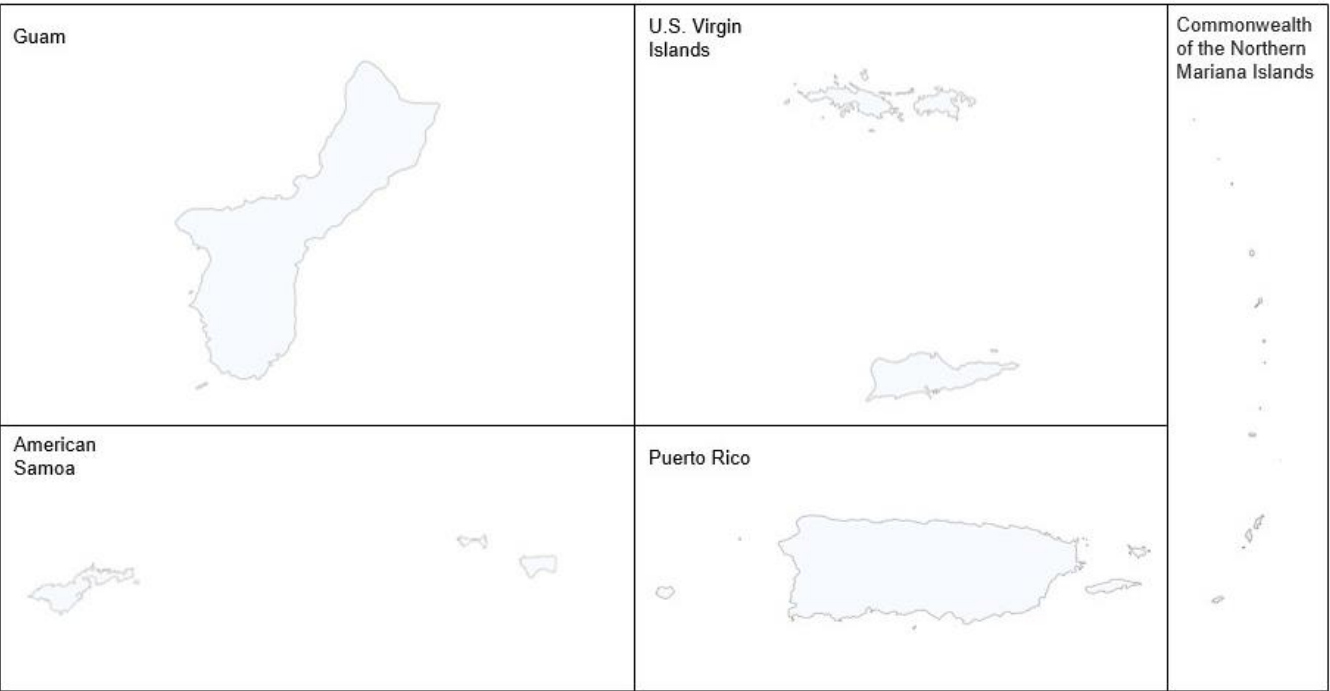
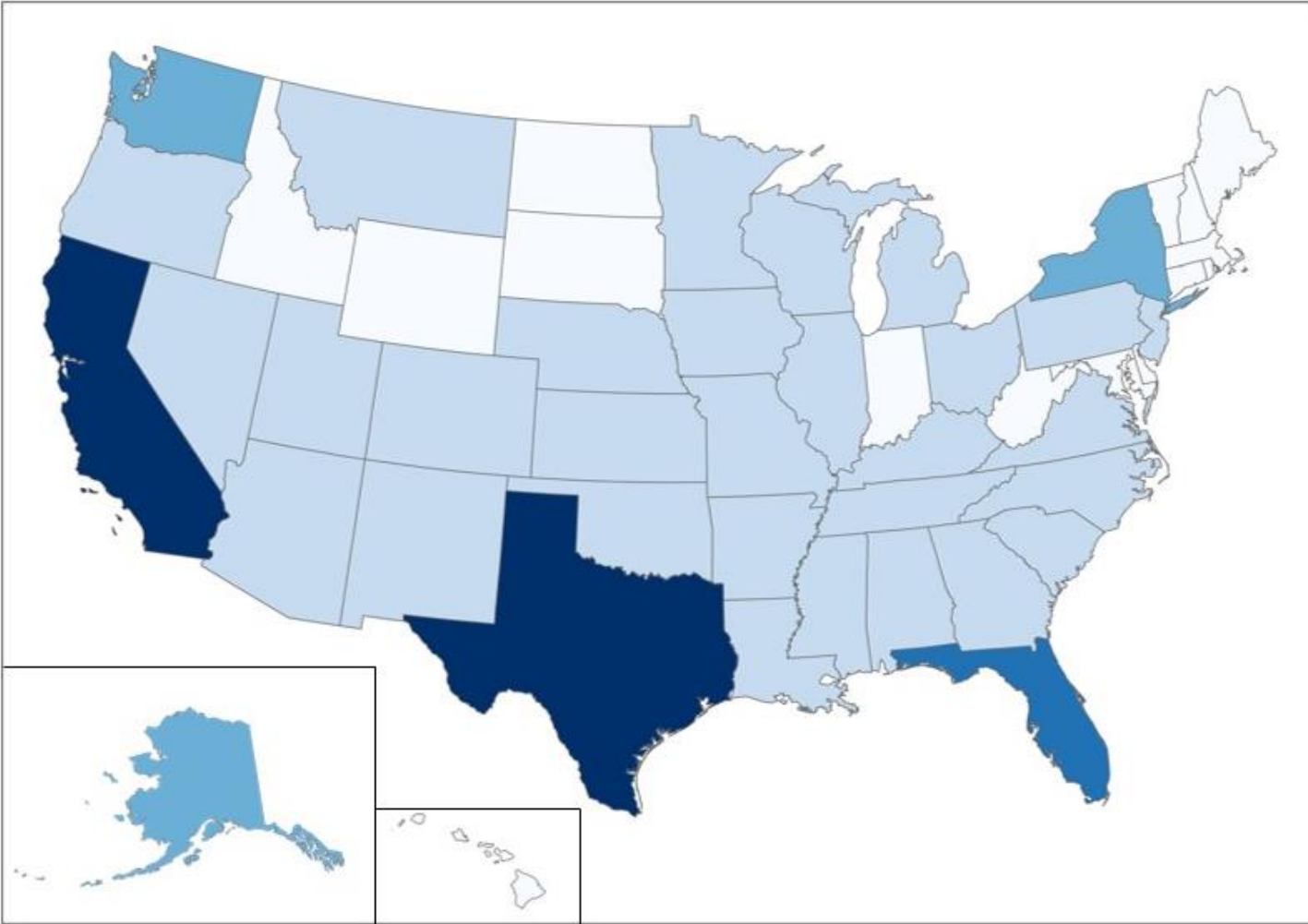


# Formula grant awards announced through September 5, 2023

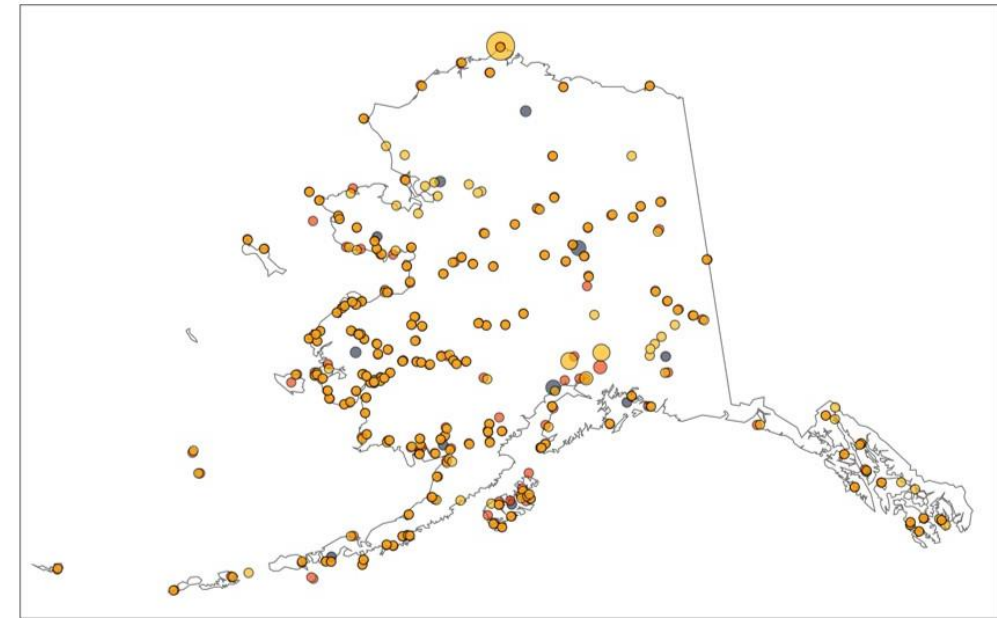
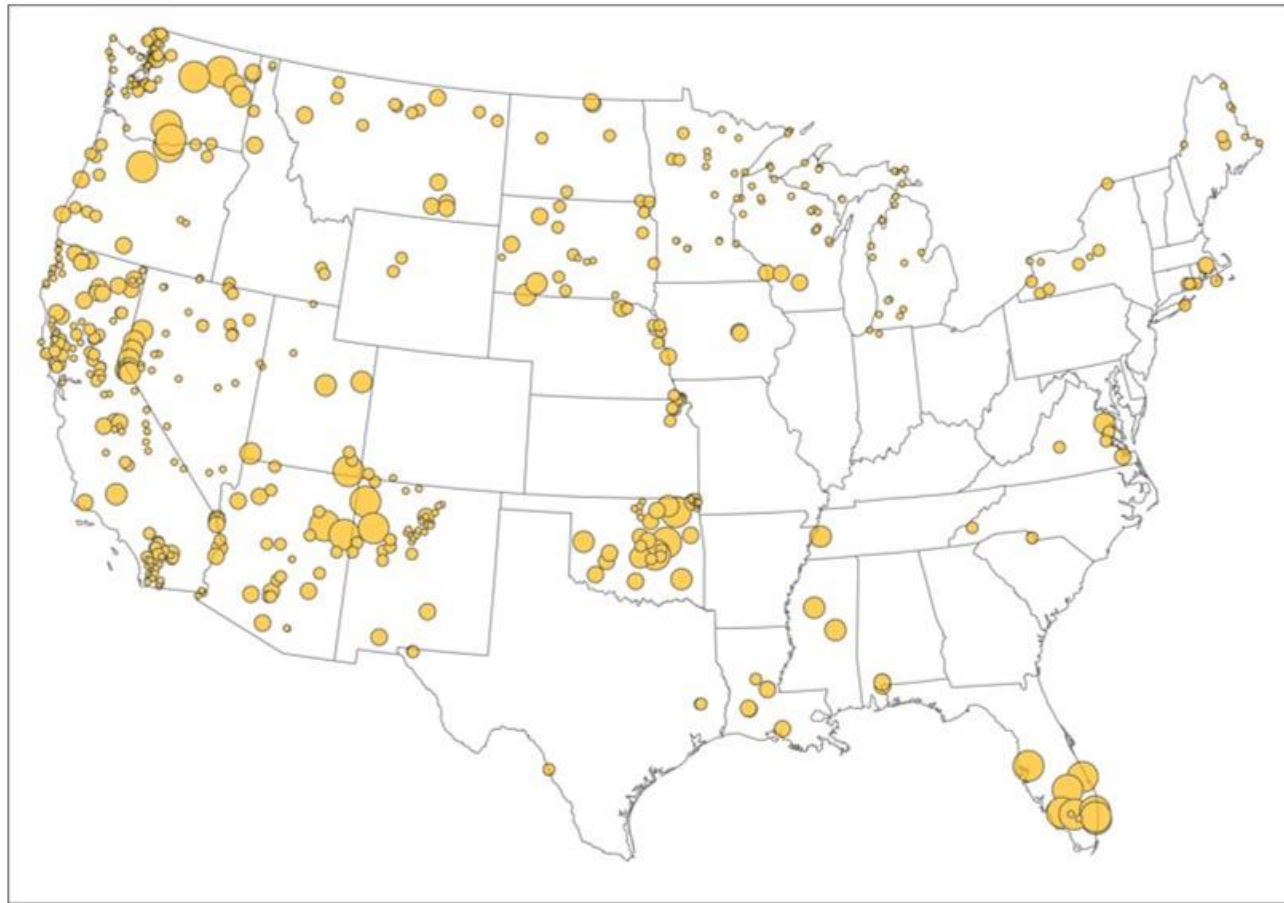
37 States, 29 Tribal Entities, one territory, and the District of Columbia have been Awarded



# BIL 40101(d) Fiscal Years 2022 and 2023 Total Funding: US States and Territories



# BIL 40101(d) Fiscal Years 2022 and 2023 Total Funding: US Federally Recognized Tribes, Alaskan Federally Recognized Tribes and Alaska Native Corporations



## Total Funding

- \$0 - \$250,000
- > \$250,000 - \$500,000
- > \$500,000 - \$1,000,000
- > \$1,000,000 - \$1,500,000
- > \$1,500,000 - \$5,000,000

## Indian Tribe Type

- U.S. Federally Recognized Tribes
- Alaska Native Village Corporations (ANVCs)
- Alaska Native Regional Corporations (ANRCs)

# Background and Motivation for Reporting Design



# Motivation for Metrics Collection

## As society sees:

- ▶ Increases in magnitude and frequency of weather-related outages events
- ▶ Increases in cost to operate and maintain electric infrastructure
- ▶ Increases in size and variability of energy demand
- ▶ Increases in low-carbon and distributed energy resources

## Industry, regulators and policymakers are grappling with competing energy investment needs:

- ▶ What should be prioritized and why?
- ▶ What investments provide broad benefits?
- ▶ What investments are most cost-effective?

## To answer these questions, decision-makers need access to the right data:

- ▶ What are the investments options and how much do they cost?
- ▶ How well do these investments perform during disruptive events?
- ▶ What is the return on investment, incorporating a range of benefits?



# Reporting Resources

## NETL Post-Award webpage

### Project Management Reporting Documents:

- ▶ [Financial Report \(SF-425\)](#); Quarterly & Final
- ▶ [Guidance for Bipartisan Infrastructure Law Grid Resilience Formula Grant Metrics Tracking](#)
- ▶ [Project Management Plan \(PMP\)/Quarterly Progress Report \(QPR\)](#); Quarterly
  - ▶ [Project Management Plan \(PMP\)/Quarterly Progress Report \(QPR\) Instructions](#)
- ▶ Annual Program Metrics and Impact Report; Yearly
  - ▶ [Annual Program Metrics and Impact Report Instructions](#)
  - ▶ [For Recipients awarded \*\*MORE THAN \(or equal to\) \\$500,000\*\* in Year 1 \*AND\* more than \\$500,000 in Year 2](#)
  - ▶ [For Recipients awarded \*\*LESS THAN \\$500,000\*\* in Year 1 \*AND/OR\* less than \\$500,000 in Year 2](#)

<https://netl.doe.gov/bilhub/grid-resilience/formula-grants/post-award-documents>

## GDO Post-Award webpage

POST-AWARD RESOURCES

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- [Guidance for Bipartisan Infrastructure Law Grid Resilience Formula Grant Metrics Tracking](#)
- [Post-Award Resource Documents](#)

<https://www.energy.gov/gdo/grid-resilience-statetribal-formula-grant-program>



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Slides and webinar recording will be published to the GDO Post-Award Resources page.



# Reporting Requirements of DOE

## Infrastructure Investment and Jobs Act Section 40101(i)

- ▶ DOE submits a biennial report to Congress on the grid resilience grant programs that includes:
  - A) the costs of the projects for which grants are awarded to eligible entities;
  - B) the types of activities, technologies, equipment, and hardening measures funded by those grants; and
  - C) the extent to which the ability of the power grid to withstand disruptive events has increased.

## Executive Order 14052 Implementation of the Infrastructure Investment and Jobs Act

- ▶ Directs agencies to prioritize “investing public dollars efficiently and equitably, working to avoid waste, and focusing **on measurable outcomes** for the American people.”

## Executive Order 14008 Justice 40 Initiative

- ▶ Directs agencies to deliver 40 percent of the overall benefits of certain Federal investments to disadvantaged communities.



# Translating Requirements into Metrics

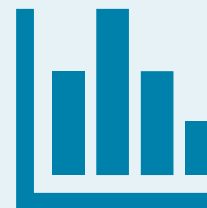
## Build Metrics

Build metrics refer to the monetary investments, electricity infrastructure assets, policies and programs that are part of grid resilience projects.



## Impact Metrics

Impact metrics refer to grid resilience capabilities enabled by projects and measure the extent to which projects have reduced the likelihood and consequences of disruptive events



## Community & Equity

Community & Equity metrics refer to policies and programs that will be implemented to advance equity, engage communities and create good paying jobs with free and fair choice to join a union, the incorporation of strong labor standards, and workforce development.



# Metrics Selection Framework

		Resilience Objective	
		Prevent Outages from Occurring	Reduce Time to Restore Power
How?	<ul style="list-style-type: none"> <li>• Component hardening</li> <li>• Undergrounding power lines</li> <li>• Relocate, replace, or reconductor power lines</li> <li>• Increased operation and maintenance activities (vegetation management, pole inspection and replacement etc.)</li> <li>• System monitoring (health sensors, power quality monitors etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Inventory management</li> <li>• Improving ability to access electrical components for repairs</li> <li>• Redundancy to allow for load transfer (e.g., looped circuits, feeder switching etc.)</li> <li>• Increased system visibility to show where outages occur</li> </ul>	
Where?	<ul style="list-style-type: none"> <li>• Multiple locations throughout a system</li> <li>• Targeted section(s) of power lines</li> <li>• Targeted feeder</li> <li>• Specific substation</li> <li>• Specific clusters of customers</li> <li>• Disadvantaged communities as defined by the DOEJustice40 programs</li> </ul>		
Why?	<ul style="list-style-type: none"> <li>• Improve average overall performance</li> <li>• Improve average performance against specific outage threat (e.g., wildfire, hurricane, ice storm)</li> <li>• Increase critical infrastructure resilience</li> <li>• Improve performance of historically underperforming sections of the grid</li> <li>• Improve resilience of historically underserved communities or communities of interest</li> </ul>		

# Metrics Selection Framework (continued)

What to measure?	Resilience Objective	
	Prevent Outages from Occurring	Reduce Time to Restore Power
<b>Build metrics</b>	<ul style="list-style-type: none"> <li>• Miles of transmission and distribution lines impacted by project</li> <li>• Number of transmission and distribution poles impacted by project</li> <li>• Number and type of substation hardening projects</li> <li>• Megawatts of generating units weatherized</li> <li>• Energy and power rating of batteries installed</li> </ul>	
<b>Equity and Community Benefit metrics</b>	<ul style="list-style-type: none"> <li>• Number and demographics of employees hired as a part of the project</li> <li>• Number of individuals receiving training as part of the project.</li> <li>• Proportion of individuals hired or trained from disadvantaged communities</li> <li>• Number of meetings or outreach activities held with community members, specifically those from communities of interest</li> <li>• Grant funding dollars that went to projects benefitting disadvantaged communities</li> </ul>	
<b>Impact metrics before and after implementation in targeted location for targeted reason using:</b>	<ul style="list-style-type: none"> <li>• Number of outages</li> <li>• Number and type of repairs needed</li> <li>• Number of customer interruptions</li> <li>• Number of customers experiencing multiple interruptions</li> <li>• System Average Interruption Frequency Index (SAIFI)</li> <li>• Number and type of customers benefitting from project</li> <li>• Outage Recovery Costs</li> </ul>	<ul style="list-style-type: none"> <li>• Hours to repair/replace equipment</li> <li>• System Average Interruption Duration Index (SAIDI)</li> <li>• Customer Average Interruption Duration Index (CAIDI)</li> <li>• Hours to restore 50/90/100% of customers post outage event</li> <li>• Number and type of customers benefitting from project</li> <li>• Outage Recovery Costs</li> </ul>

# Example



# Single Subaward Proposal– *Illustrative Example*

## Subrecipient Information

- ▶ Qualifies as small entity according to IIJA 40101
- ▶ Rural Electric Cooperative
- ▶ 20,000 customers
- ▶ Territory covers 10 ZIP Codes and 12 Census Tracts, 5 of which are considered Disadvantaged Communities.

## Alignment with Recipient Resilience Objectives

- ▶ Several areas within the service territory experience higher-than-average outages due to excessive wind, flooding, wildfires, or hurricanes.
- ▶ Hire and train 2 dedicated employees for meter change out
- ▶ Funding line worker apprentice program through local community college
- ▶ Engaged community for opt-in program for new smart meters, were able to get 50% of customers to sign up

## Technologies Proposed

- ▶ Project 1: Replacing 10,000 meters with Advanced RF (Radio Frequency) smart meters
- ▶ Project 2: Installing an Artificial Intelligence-based vegetation management software system

# Quarterly Progress Reports



# Filling out Quarter Progress Reports (QPRs) after projects are selected

## Project 1

Project Management Plan and Quarterly Progress Report	
Select this Reporting Period's Federal Fiscal Year Here.	
Select Reporting Period's Quarter Here.	
DOE Grant Agreement Number	
Project ID Number	Project 1
Project Organization or Subawardee	Sample Electric Cooperative
Project Title	RF Smart Meters
Project Performance Period Start Date (mm/dd/yyyy)	4/1/2024
Project Performance Period End Date (mm/dd/yyyy)	12/30/2028

[Overview](#) | [Recipient](#) | **[Project 1](#)** | [Project 2](#) | [Project 3](#) | [Project 4](#) | [Project 5](#) | [Build Metrics Table Info](#)

## Project 2

Project Management Plan and Quarterly Progress Report	
Select this Reporting Period's Federal Fiscal Year Here.	
Select Reporting Period's Quarter Here.	
DOE Grant Agreement Number	
Project ID Number	Project 2
Project Organization or Subawardee	Sample Electric Cooperative
Project Title	Vegetation management
Project Performance Period Start Date (mm/dd/yyyy)	5/20/2024
Project Performance Period End Date (mm/dd/yyyy)	6/30/2026

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## Project 1: RF Smart Meters

# QPR – Project Type

## Project 2: Vegetation Management

Is this work being performed by a subawardee that qualifies as a Section 40101(d)(6) defined small utility?	Yes	Is this work being performed by a subawardee that qualifies as a Section 40101(d)(6) defined small utility?	Yes
Number of customers (i.e., meters) served by the entity performing the project:	20,000	Number of customers (i.e., meters) served by the entity performing the project:	20,000
Number of customers (i.e., meters) that are expected to see benefits from the project:	20,000	Number of customers (i.e., meters) that are expected to see benefits from the project:	10,000
<b>BIL 40101(d) Category of Subawardee:</b> <i>Review the list and delete all categories that do not match your role as a Subawardee in this project. Do not add any other categories or text unless approved by DOE.</i>	<ul style="list-style-type: none"> <li>* Distribution Provider</li> <li>* Electric Grid Operator</li> <li>* Electricity Generator</li> <li>* Electricity Storage Operator</li> <li>* Fuel Supplier</li> <li>* Transmission Owner/Operator</li> <li>* Other (as approved by DOE)</li> </ul>	<b>BIL 40101(d) Category of Subawardee:</b> <i>Review the list and delete all categories that do not match your role as a Subawardee in this project. Do not add any other categories or text unless approved by DOE.</i>	<ul style="list-style-type: none"> <li>* Distribution Provider</li> <li>* Electric Grid Operator</li> <li>* Electricity Generator</li> <li>* Electricity Storage Operator</li> <li>* Fuel Supplier</li> <li>* Transmission Owner/Operator</li> <li>* Other (as approved by DOE)</li> </ul>
<b>BIL 40101(d) Category of Work:</b> <i>Review the list and delete all categories of work that are not related to the work that you will do during this project. Do not add any other categories or text unless approved by DOE.</i>	<ul style="list-style-type: none"> <li>* Adaptive Protection Technologies</li> <li>* Advanced Modeling Technologies</li> <li>* Battery-Storage Components: Use of DERs for Enhancing System Adaptive capacity During Disruptive Events</li> <li>* Battery-Storage Components: Use or Construction of DERs for Enhancing System Adaptive capacity During Disruptive Events</li> <li>* Fire-resistant Technologies and Fire Prevention Systems</li> <li>* Hardening of Power Lines, Facilities, Substations, or Other Systems</li> <li>* Microgrids: Use of existing DERs for Enhancing System Adaptive Capacity During Disruptive Events</li> <li>* Monitoring and Control Technologies</li> <li>* Reconductoring of Power Lines with Low-Sag, Advanced Conductors</li> <li>* Relocation of Power Lines</li> <li>* Replacement of Old Overhead Conductors &amp; Underground Cables</li> <li>* Undergrounding of Electrical Equipment</li> <li>* Utility Pole Management</li> <li>* Vegetation and Fuel-Load Management</li> <li>* Weatherization Technologies and Equipment</li> <li>* Other (as approved by DOE and noted in Project Description below)</li> </ul>	<b>BIL 40101(d) Category of Work:</b> <i>Review the list and delete all categories of work that are not related to the work that you will do during this project. Do not add any other categories or text unless approved by DOE.</i>	<ul style="list-style-type: none"> <li>* Adaptive Protection Technologies</li> <li>* Advanced Modeling Technologies</li> <li>* Battery-Storage Components: Use of DERs for Enhancing System Adaptive capacity During Disruptive Events</li> <li>* Battery-Storage Components: Use or Construction of DERs for Enhancing System Adaptive capacity During Disruptive Events</li> <li>* Fire-resistant Technologies and Fire Prevention Systems</li> <li>* Hardening of Power Lines, Facilities, Substations, or Other Systems</li> <li>* Microgrids: Use of existing DERs for Enhancing System Adaptive Capacity During Disruptive Events</li> <li>* Monitoring and Control Technologies</li> <li>* Reconductoring of Power Lines with Low-Sag, Advanced Conductors</li> <li>* Relocation of Power Lines</li> <li>* Replacement of Old Overhead Conductors &amp; Underground Cables</li> <li>* Undergrounding of Electrical Equipment</li> <li>* Utility Pole Management</li> <li>* Vegetation and Fuel-Load Management</li> <li>* Weatherization Technologies and Equipment</li> <li>* Other (as approved by DOE and noted in Project Description below)</li> </ul>



# QPR – Project Benefits

## Project 1: RF Smart Meters

<b>Project Description</b>	Replacing 10,000 meters in DACs with Advanced RF (Radio Frequency) smart meters
<b>Project Benefit Type(s)</b> <i>Review the list and delete all categories of benefits that are not related to the benefits that will be provided by this project. Do not add any other categories or text unless approved by DOE.</i>	<ul style="list-style-type: none"> <li>* Preventing Initial Outages</li> <li>* Preventing Cascading Outages</li> <li>* Providing Contingency Power</li> <li>* Reducing Restoration Time</li> <li>* Adding System Redundancy</li> <li>* Adding System Reconfiguration Capability</li> <li>* Supporting Islanded Operations</li> <li>* Replacing Aging Infrastructure</li> <li>* Other (noted in Benefit Description)</li> </ul>
<b>Project Benefit Description</b>	detect outages faster, so customers don't have to report them. 60% of customers that opted into program reside in DACs

## Project 2: Vegetation Management

<b>Project Description</b>	Install a vegetation management system that tracks vegetation related outages and uses satellite imagery and LIDAR to assess vegetation risks along rights of ways.
<b>Project Benefit Type(s)</b> <i>Review the list and delete all categories of benefits that are not related to the benefits that will be provided by this project. Do not add any other categories or text unless approved by DOE.</i>	<ul style="list-style-type: none"> <li>* Preventing Initial Outages</li> <li>* Preventing Cascading Outages</li> <li>* Providing Contingency Power</li> <li>* Reducing Restoration Time</li> <li>* Adding System Redundancy</li> <li>* Adding System Reconfiguration Capability</li> <li>* Supporting Islanded Operations</li> <li>* Replacing Aging Infrastructure</li> <li>* Other (noted in Benefit Description)</li> </ul>
<b>Project Benefit Description</b>	System uses AI to better predict problem areas on the system that can be proactively addressed.

# QPR – Total Budget per Project

## Project 1: RF Smart Meters

Budget Category	Total Approved Project Budget	
	Federal	Non-Federal
Personnel	\$335,000	\$165,000
Fringe Benefits		
Travel		
Equipment	\$1,000,000	\$500,000
Supplies	\$75,000	\$25,000
Construction		
Other		
<b>Contractual</b>	<b>\$0</b>	<b>\$0</b>
<i>Name (list all other contracts \$25,000 or more)</i>		
<i>Name (list all other contracts \$25,000 or more)</i>		
Sum of individual contracts under \$25,000		
<b>Sub-Total Direct Charges</b>	<b>\$1,410,000</b>	<b>\$690,000</b>
Indirect Charges		
<b>Total</b>	<b>\$1,410,000</b>	<b>\$690,000</b>

## Project 2: Vegetation Management

Budget Category	Total Approved Project Budget	
	Federal	Non-Federal
Personnel		
Fringe Benefits		
Travel		
Equipment		
Supplies		
Construction		
Other		
<b>Contractual</b>	<b>\$400,000</b>	<b>\$200,000</b>
<i>Name (list all other contracts \$25,000 or more)</i>		
<i>Name (list all other contracts \$25,000 or more)</i>		
Sum of individual contracts under \$25,000		
<b>Sub-Total Direct Charges</b>	<b>\$400,000</b>	<b>\$200,000</b>
Indirect Charges		
<b>Total</b>	<b>\$400,000</b>	<b>\$200,000</b>



# QPR – Build Metrics

## Project 1: RF Smart Meters

BUILD METRICS (Information about project attributes)				
<a href="#">Metric (select from list)</a>	Type (character lim: 300)	Goal Value	Progress	
			Value During Reporting Period	Cumulative Value for Project Duration
Number of other monitoring/metering devices installed	Insert specific vendor and product/device type	10,000	50	50
Expected lifetime of new equipment (specify equipment in "Type" field)		15	N/A	N/A

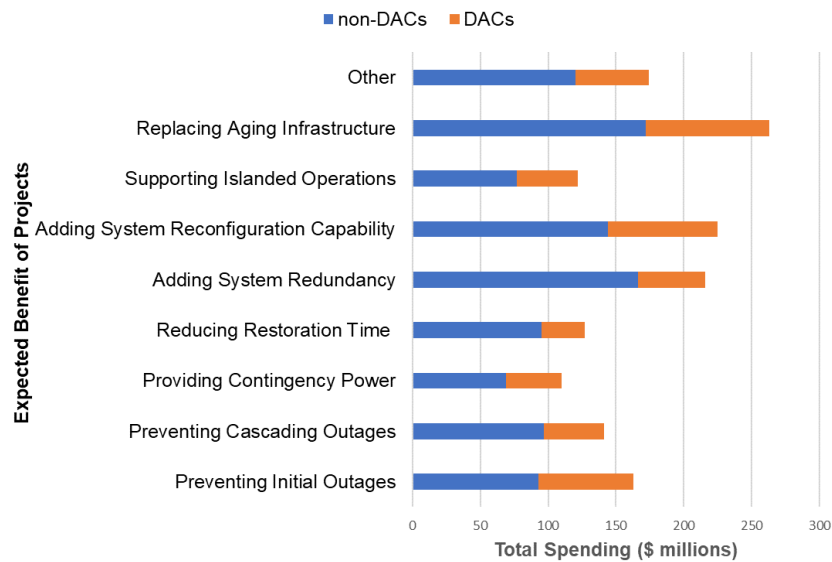
## Project 2: Vegetation Management

BUILD METRICS (Information about project attributes)				
<a href="#">Metric (select from list)</a>	Type (character lim: 300)	Goal Value	Progress	
			Value During Reporting Period	Cumulative Value for Project Duration
Percentage of system migrated into new software system (specify software system in "Type" field OMS, ADMS, SCADA, inventory management, workforce management, or other)	Insert specific vendor and product	100	5	5

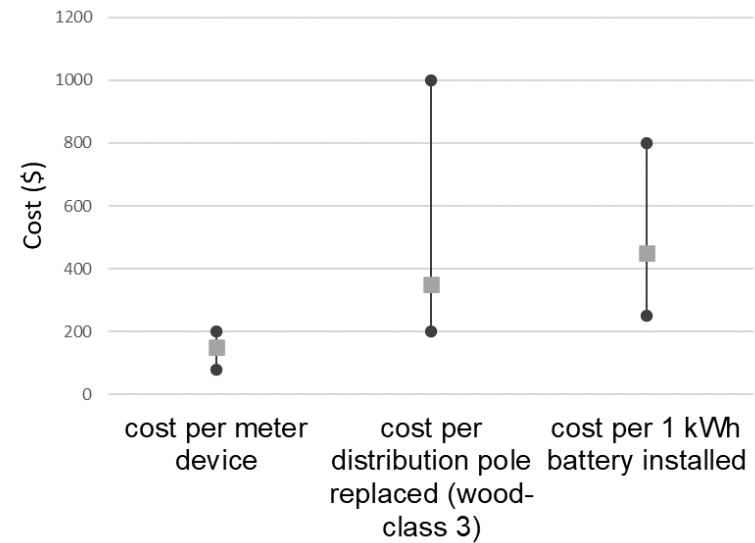
# What can we learn from the information collected in the QPR?

## *Illustrative Examples*

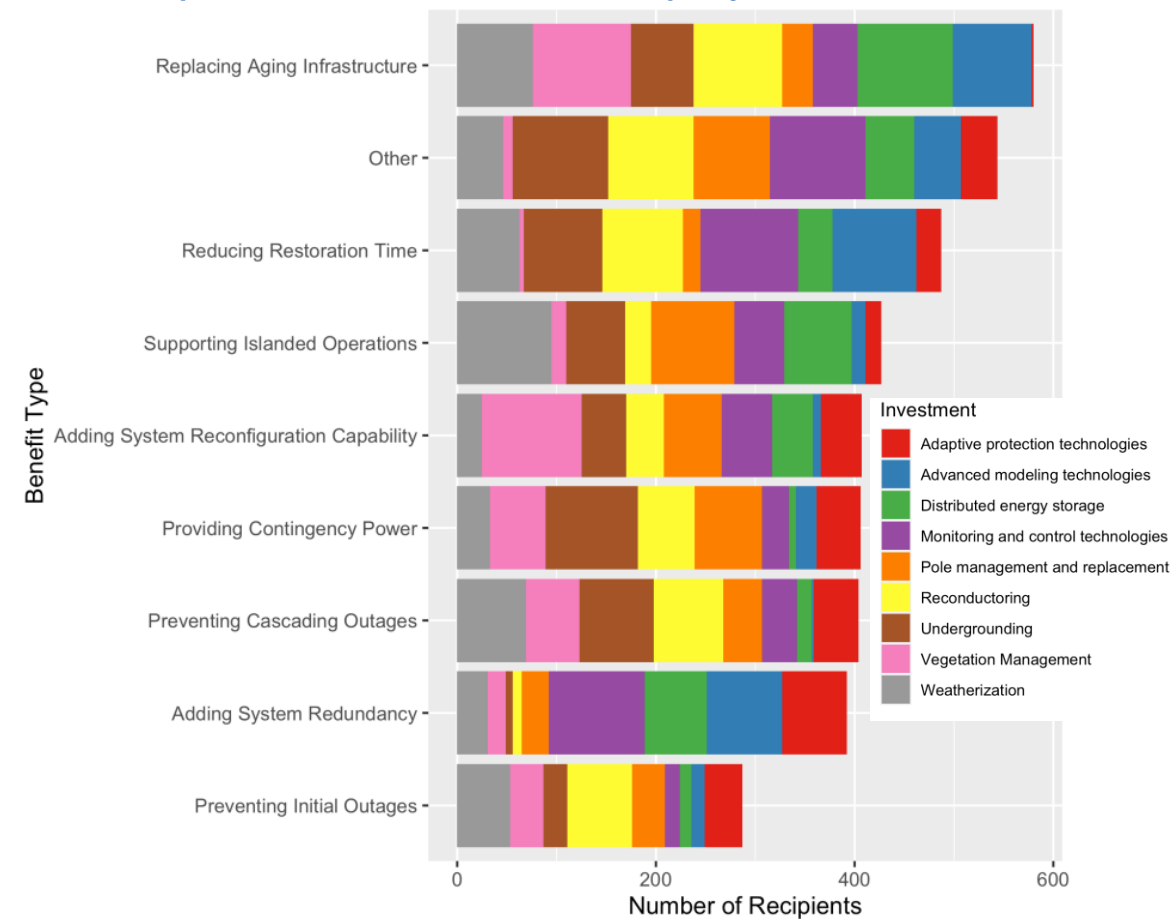
a) Total spending benefitting DACs



b) Cost ranges for similar project types



c) Trends in project types preferred and the expected benefit of those projects



# Annual Program Metrics and Impact Report



# Filling out annual program metrics and impact report

## Recipient Tab for *all* Technical Assistance Spending

ANNUAL PROGRAM METRICS AND IMPACT REPORT									
Select this Reporting Period's Federal Fiscal Year Here									
DOE Grant Agreement Number									
TECHNICAL ASSISTANCE									
Organization Details				<u>Communities of Interest Served (select all that apply)</u>					
Organization Name	<u>Technical Assistance Category (select from list)</u>	Technical Assistance Deliverable (select from list)	If Other, Please Specify	Disadvantaged Community	Tribal Community	Fossil Energy Community	Rural Community	Other Community	If Other, Please Specify
DOE National Lab	Technical Analysis	Report		No	No	No	No	Yes	prime applicant agency
Consulting Firm	Stakeholder Coordination	Workshop		Yes	Yes	No	Yes	Yes	residents within sample coop service territory

This is the only table that can be filled out before projects are selected



# Annual Report – project information should match QPR information

## Project 2

ANNUAL PROGRAM METRICS AND IMPACT REPORT	
Project ID Number <i>(Please make sure the project number aligns with the project numbers listed in the quarterly progress report)</i>	Project 2
Project Organization or Subawardee	sample coop
Project Title	Vegetation management
Project Performance Period Start Date (mm/dd/yyyy)	5/20/2024
Project Performance Period End Date (mm/dd/yyyy)	6/30/2026
<a href="#">Overview</a>   <a href="#">Recipient</a>   <a href="#">Project 1</a>   <b><a href="#">Project 2</a></b>   <a href="#">Project 3</a>   <a href="#">Project 4</a>   <a href="#">Project 5</a>   <a href="#">Table of Metrics</a>   <a href="#">Definitions</a>	

## Project 1

ANNUAL PROGRAM METRICS AND IMPACT REPORT	
Project ID Number <i>(Please make sure the project number aligns with the project numbers listed in the quarterly progress report)</i>	Project 1
Project Organization or Subawardee	sample coop
Project Title	RF smart meters
Project Performance Period Start Date (mm/dd/yyyy)	4/1/2024
Project Performance Period End Date (mm/dd/yyyy)	12/30/2028
<a href="#">Overview</a>   <a href="#">Recipient</a>   <b><a href="#">Project 1</a></b>   <a href="#">Project 2</a>   <a href="#">Project 3</a>   <a href="#">Project 4</a>   <a href="#">Project 5</a>   <a href="#">Table of Metrics</a>   <a href="#">Definitions</a>	



# Annual Report – Project 1 Impact Metrics

Resilience goal – reduce restoration time for all new metered customers

BASELINE IMPACT METRICS (performance measures)									
Impact Metric (select from list)	Outage Type (select from list)	Does outage data include Major Event Days (MED)?	Coverage (select from list)	Coverage Type (char lim: 100)	Baseline (Before Project Implementation) Please <i>ONLY</i> enter values for the 5 years preceeding this Fiscal Year Report				
					2019 Value	2020 value	2021 Value	2022 Value	2023 Value
Customer Average Interruption Duration Index (CAIDI)	All Causes	Yes, all outages	Other (insert necessary info in "Coverage Type" field)	Feeders > 70% smart meter adoption	57	56	63	59	77
Customer Average Interruption Duration Index (CAIDI)	All Causes	Yes, MED Only	Other (insert necessary info in "Coverage Type" field)	Feeders > 70% smart meter adoption	51	71	57	79	100
Customer Average Interruption Duration Index (CAIDI)	All Causes	Yes, all outages	Other (insert necessary info in "Coverage Type" field)	Feeders < 40% smart meter adoption	67	56	93	53	83

Comparing duration of all outages pre and post new meters

Comparing duration of MED outages pre and post new meters

Also compare duration of all outages between low and high adoption feeders

MED: "Major Event Days"



# Annual Report – Project 1 Impact Metrics

Resilience goal – reduce restoration time for all new metered customers

CURRENT FISCAL YEAR IMPACT METRICS (performance measures)					Progress (During Project Implementation)		
<u>Impact Metric (select from list)</u>	<u>Outage Type (select from list)</u>	<u>Does outage data include Major Event Days (MED)?</u>	<u>Coverage (select from list)</u>	<u>Coverage Type (char lim: 100)</u>	<u>Value</u>	<u>Start Date of Data Collection (mm/dd/yyyy)</u>	<u>End Date of Data Collection (mm/dd/yyyy)</u>
Customer Average Interruption Duration Index (CAIDI)	All Causes	Yes, all outages	Other (insert necessary info in "Coverage Type" field)	Feeders > 70% smart meter adoption	65	04/01/24	06/31/2024
Customer Average Interruption Duration Index (CAIDI)	All Causes	Yes, MED Only	Other (insert necessary info in "Coverage Type" field)	Feeders > 70% smart meter adoption	84	04/01/24	06/31/2024
Customer Average Interruption Duration Index (CAIDI)	All Causes	Yes, all outages	Other (insert necessary info in "Coverage Type" field)	Feeders < 40% smart meter adoption	56	04/01/24	06/31/2024

Comparing duration of all outages pre and post new meters

Comparing duration of MED outages pre and post new meters

Also compare duration of all outages between low and high adoption feeders

MED: "Major Event Days"



# Annual Report – Project 2 Impact Metrics

Resilience goal – reduce vegetation related outages over entire service territory

BASELINE IMPACT METRICS (performance measures)										
Impact Metric (select from list)	Outage Type (select from list)	Does outage data include Major Event Days (MED)?	Coverage (select from list)	Baseline (Before Project Implementation)						
				Please <u>ONLY</u> enter values for the 5 years preceding this Fiscal Year Report						
				2019 Value	2020 value	2021 Value	2022 Value	2023 Value	2024 Value	2025 Value
Number of outages	Vegetation	Yes, all outages	Full service territory	120	140	170	160	150		
System Average Interruption Frequency Index (SAIFI)	Vegetation	Yes, all outages	Full service territory	1	1.2	1.7	1.6	1.4		
Outage recovery cost (\$)	Vegetation	Yes, all outages	Full service territory	60000	90000	120000	120000	70000		

Discuss with subrecipient how they calculate and track different outage types



# Annual Report – Project 2 Impact Metrics

Resilience goal – reduce vegetation related outages over entire service territory

CURRENT FISCAL YEAR IMPACT METRICS (performance measures)				Progress ( <i>During</i> Project Implementation)		
<u>Impact Metric (select from list)</u>	<u>Outage Type (select from list)</u>	<u>Does outage data include Major Event Days (MED)?</u>	<u>Coverage (select from list)</u>	Value	Start Date of Data Collection (mm/dd/yyyy)	End Date of Data Collection (mm/dd/yyyy)
Number of outages	Vegetation	Yes, all outages	Full service territory	3	05/20/24	06/30/24
System Average Interruption Frequency Index (SAIFI)	Vegetation	Yes, all outages	Full service territory	0.8	05/20/24	06/30/24
Outage recovery cost (\$)	Vegetation	Yes, all outages	Full service territory	1000	05/20/24	06/30/24

Discuss with subrecipient how they calculate and track different outage types



# Annual Report – Training

## Project 1 hired two new people and trained them for meter change out

JOB CREATION AND TRAINING		
Metrics	Select from List	Number
Training		
Was training offered as part of the project? (specify in "Explanation" field)	Yes	
Type of training provided	Other earn-as-you-learn on-the-job training	
Does your program target underserved or underrepresented population(s) for training?	No	
If yes, what target population do you serve?		
Did the Subaward Entity partner with a community-based organization?	Yes	
Did the Subaward Entity partner with a labor union?	Yes	
Number of individuals receiving training (including registered apprenticeships) as part of the project.		2
Average number of hours of training per individual (including on-the-job training/work performed by registered apprentices).		10
Number of individuals receiving raise or promotion as a result of training.		0
Number of individuals that are placed in new paid positions (including registered apprenticeships) as a result of training.		2

## Project 2 contracted a software vendor

JOB CREATION AND TRAINING		
Metrics	Select from List	Number
Training		
Was training offered as part of the project? (specify in "Explanation" field)	No	
Type of training provided		
Does your program target underserved or underrepresented population(s) for training?		
If yes, what target population do you serve?		
Did the Subaward Entity partner with a community-based organization?	Yes	
Did the Subaward Entity partner with a labor union?	Yes	
Number of individuals receiving training (including registered apprenticeships) as part of the project.		0
Average number of hours of training per individual (including on-the-job training/work performed by registered apprentices).		0
Number of individuals receiving raise or promotion as a result of training.		0
Number of individuals that are placed in new paid positions (including registered apprenticeships) as a result of training.		0

Answers to questions related to the "Subaward Entity" should be the same for both projects because they are implemented by the same entity



# Annual Report – Labor

All questions related to the “project” are passed on to any subcontractors

**Project 1 is a Subaward Entity internal project with 8 employees**

**Project 2 is implemented by a software vendor using 10 contractors**

JOB CREATION AND TRAINING		
Metrics	Select from List	Number
<b>Labor</b>		
Number of employees a part of this project (specify in "Explanation" field as needed)		8
Is there a project labor agreement (PLA) for the construction project?	Yes	
Is there a collective bargaining agreement (CBA) for the project's non-construction work?	Yes	
Has the Subaward Entity pledged neutrality with respect to union organizing?	Planning	
Is the Subaward Entity contributing to or otherwise supporting registered apprenticeship programs (e.g., financial support, hiring participants, providing training materials and facilities, etc.)? (specify in "Explanation" field)	Yes	
Is the Subaward Entity contributing or otherwise supporting non-registered apprenticeship joint-labor management or other training program? (specify in "Explanation" field)	No	
Is the Subaward Entity offering support services to workers or training participants (e.g., child care, transportation) (specify in "Explanation" field)?	Yes	
Does the project have a formal anti-discrimination or anti-harassment program or plan?	Yes	
Does the Subaward Entity have a formal Diversity, Equity, Access, and Inclusion (DEIA) Plan?	Yes	
Does the project have a workplace health and safety plan that was designed and is implemented in partnership with employees? (specify in "Explanation" field as needed)	Yes	
In support of second chance opportunities, does the Subaward Entity refrain from asking about job applicants' criminal records, arrest history, or any other history with the justice system?	Yes	
Does the Subaward Entity have specific goals for the hiring of local workers?	Yes	
Does the project have specific objective for hiring of underrepresented or disadvantaged groups?	Yes	

JOB CREATION AND TRAINING		
Metrics	Select from List	Number
<b>Labor</b>		
Number of employees a part of this project (specify in "Explanation" field as needed)		10
Is there a project labor agreement (PLA) for the construction project?	No	
Is there a collective bargaining agreement (CBA) for the project's non-construction work?	No	
Has the Subaward Entity pledged neutrality with respect to union organizing?	Planning	
Is the Subaward Entity contributing to or otherwise supporting registered apprenticeship programs (e.g., financial support, hiring participants, providing training materials and facilities, etc.)? (specify in "Explanation" field)	Yes	
Is the Subaward Entity contributing or otherwise supporting non-registered apprenticeship joint-labor management or other training program? (specify in "Explanation" field)	No	
Is the Subaward Entity offering support services to workers or training participants (e.g., child care, transportation) (specify in "Explanation" field)?	Yes	
Does the project have a formal anti-discrimination or anti-harassment program or plan?	No	
Does the Subaward Entity have a formal Diversity, Equity, Access, and Inclusion (DEIA) Plan?	Yes	
Does the project have a workplace health and safety plan that was designed and is implemented in partnership with employees? (specify in "Explanation" field as needed)	No	
In support of second chance opportunities, does the Subaward Entity refrain from asking about job applicants' criminal records, arrest history, or any other history with the justice system?	Yes	
Does the Subaward Entity have specific goals for the hiring of local workers?	Yes	
Does the project have specific objective for hiring of underrepresented or disadvantaged groups?	No	

All questions related to the “Subaward Entity” remain the same, because both projects are implemented by the same entity

# Annual Report – Sample Workforce Demographics

**Project 1 is a Subaward Entity internal project with 8 employees and trained 2 employees for the project**

WORKFORCE DEMOGRAPHICS		
Gender	Number of employees working on project	Number of trainees in project specific programs
Male	4	2
Female	4	
Non-Binary		
Other		
No Designation		
<u>Disability Status</u>	Number of employees working on project	Number of trainees in project specific programs
Has Disability		
Does Not Have Disability	6	2
Disability Status Unknown		
No Designation	2	

WORKFORCE DEMOGRAPHICS		
Gender	Number of employees working on project	Number of trainees in project specific
Male	6	
Female	4	
Non-Binary		
Other		
No Designation		
<u>Disability Status</u>	Number of employees working on project	Number of trainees in project specific programs
Has Disability	1	
Does Not Have Disability	9	
Disability Status Unknown		
No Designation		

**Project 2 is implemented by a software vendor using 10 contractors with no additional training requirements**



# Annual Report – Community Engagement

COMMUNITY ENGAGEMENT EVENTS											
Event Details		Community Engagement			Number of Attendees by Community of Interest						
Event # (Unique Identifier)	Community Engagement Event Name (Virtual or In-Person)	Type of Engagement (select from list)	Degree of Engagement (select from list)	Did This Event Include An Open Planning Forum with Participant Polling?	Tribal Community	Disadvantaged Community	Fossil Energy Community	Rural Community	Other	If Other, Please Specify	Total Attendees
1	Meter upgrade opt-in program Informational Session	Consent Based Siting	Defer to	Yes		30		50	20	Other customers	100
2	Meter upgrade opt-in program Informational Session	Consent Based Siting	Defer to	Yes		10		15	10	Other customers	35
3	Meter upgrade opt-in program Informational Session	Consent Based Siting	Defer to	Yes		5		25	20	Other customers	50

**Project 1 requested customers to opt-in to a meter upgrade program and worked with community-based organizations to inform customers of the benefits**

COMMUNITY ENGAGEMENT ACTIVITIES	
Metrics	Select from List
Does this project operate under a negotiated Community Benefits Agreement?	No
Is a Community Based Organization part of the project leadership?	Yes
Did this project get approval of tribal governments with authority over impacted areas?	No
Does this project operate under Memorandums of Understanding with Community-Based Organizations?	No
Did this project get letters of support or any other indication that they are engaging in consent-based planning?	Yes
Did this project engage Citizen Advisory Committees?	Yes
Did a representative of the Community Based Organization or Community Advisory Committee review and approve this report?	No



# Annual Report – Community Engagement

COMMUNITY ENGAGEMENT EVENTS											
Event Details		Community Engagement			Number of Attendees by Community of Interest						
Event # (Unique Identifier)	Community Engagement Event Name (Virtual or In-Person)	Type of Engagement (select from list)	Degree of Engagement (select from list)	Did This Event Include An Open Planning Forum with Participant Polling?	Tribal Community	Disadvantaged Community	Fossil Energy Community	Rural Community	Other	If Other, Please Specify	Total Attendees
1	Information session on the benefits of AI software	Reporting	Inform	No		5		5	10	Other customers	20
2	Information session on the benefits of AI software	Reporting	Inform	No		10		15	10	Other customers	35

**Project 2 did not partner with community organizations, but did hold open information sessions on the benefits of AI-based vegetation management software**

COMMUNITY ENGAGEMENT ACTIVITIES	
Metrics	Select from List
Does this project operate under a negotiated Community Benefits Agreement?	No
Is a Community Based Organization part of the project leadership?	No
Did this project get approval of tribal governments with authority over impacted areas?	No
Does this project operate under Memorandums of Understanding with Community-Based Organizations?	No
Did this project get letters of support or any other indication that they are engaging in consent-based planning?	No
Did this project engage Citizen Advisory Committees?	No
Did a representative of the Community Based Organization or Community Advisory Committee review and approve this report?	No

# Differences between the two types of Annual Report templates

## Greater than \$500K Years 1 AND 2

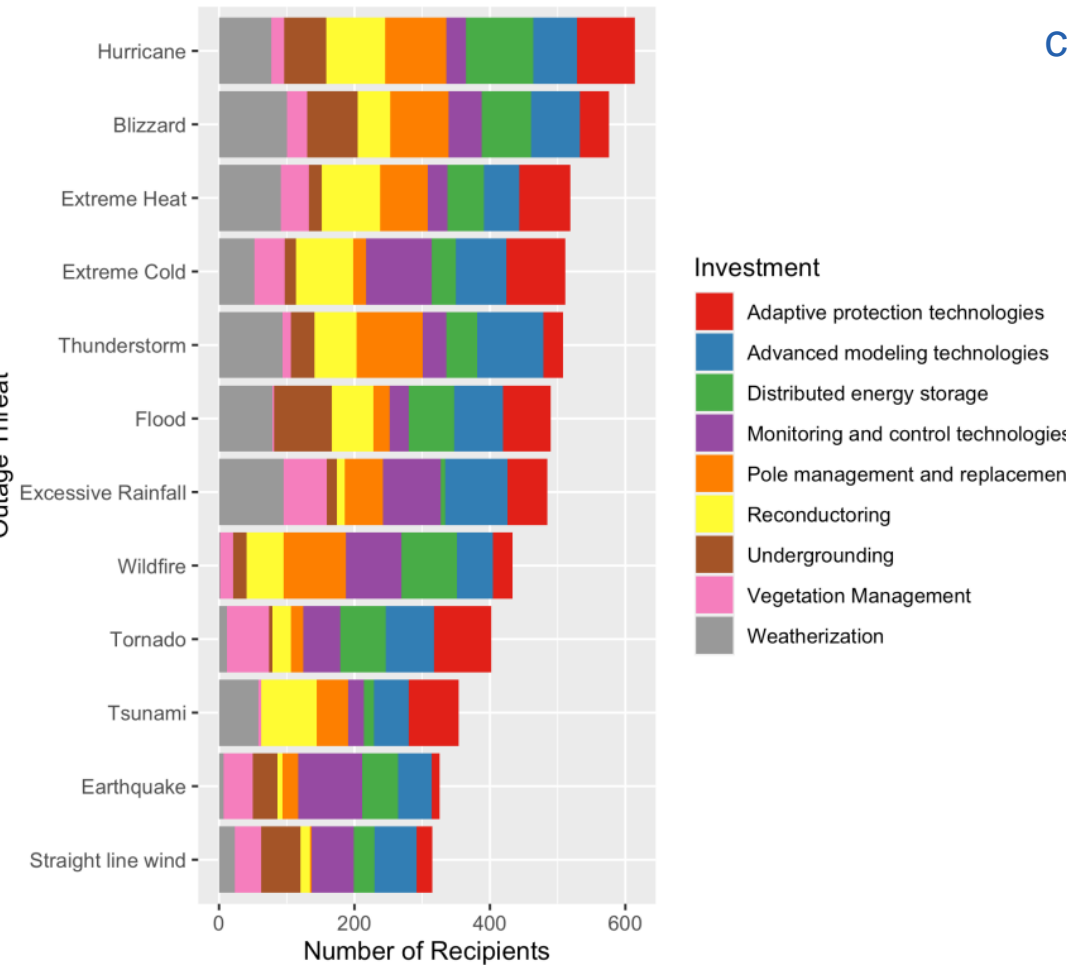
## Less than \$500K Years 1 OR 2

- ▶ Communities of interest targeted for TA
- ▶ Baseline for MEDs and location of projects
- ▶ Project duration tracking for MEDs and location of projects
- ▶ Demographics of those employed and trained for projects
- ▶ Communities of interest engaged
- ▶ Agreements with community-based groups

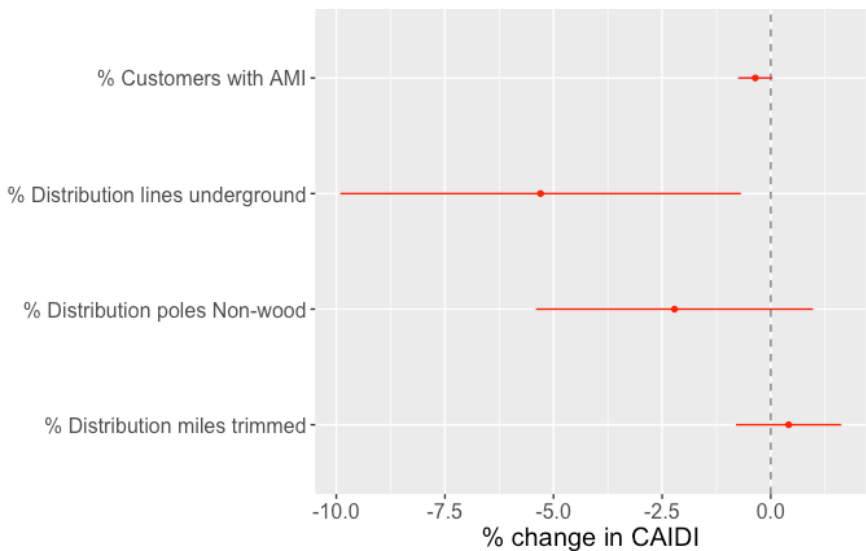
- ▶ Type of TA and who performs it
- ▶ Project ID and Status
- ▶ Baseline for impact metric and outage type
- ▶ Project duration tracking for impact metric and outage type
- ▶ Type of training and numbers trained
- ▶ Number employed
- ▶ Quality of job questions
- ▶ Community engagement events types and locations

# What can we learn from the information collected in the Annual Report? *Illustrative Examples*

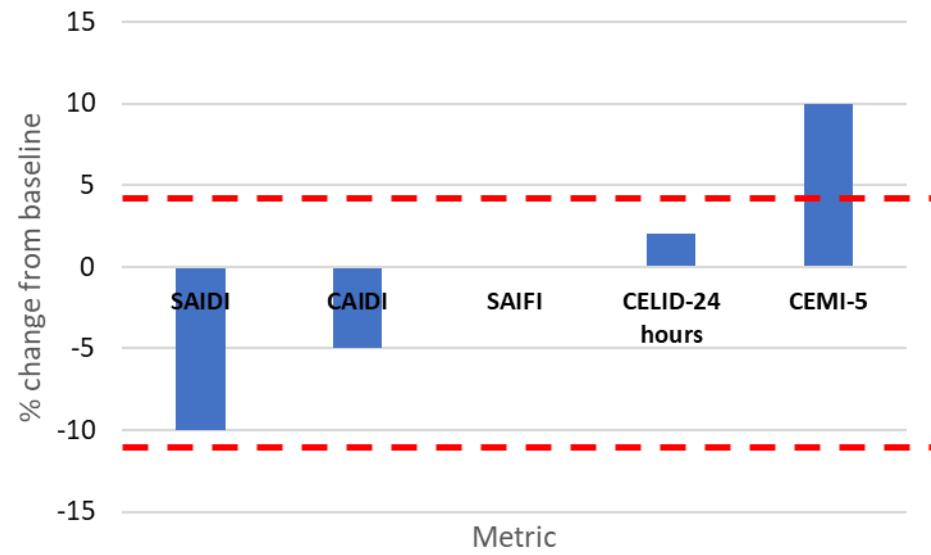
b) Trends in which project types are favored and for which outage causes



c) If sufficient data is collected post-project implementation, the added resilience benefit for incremental changes in investments



a) Track large changes in impact metrics between baseline and during/post implementation

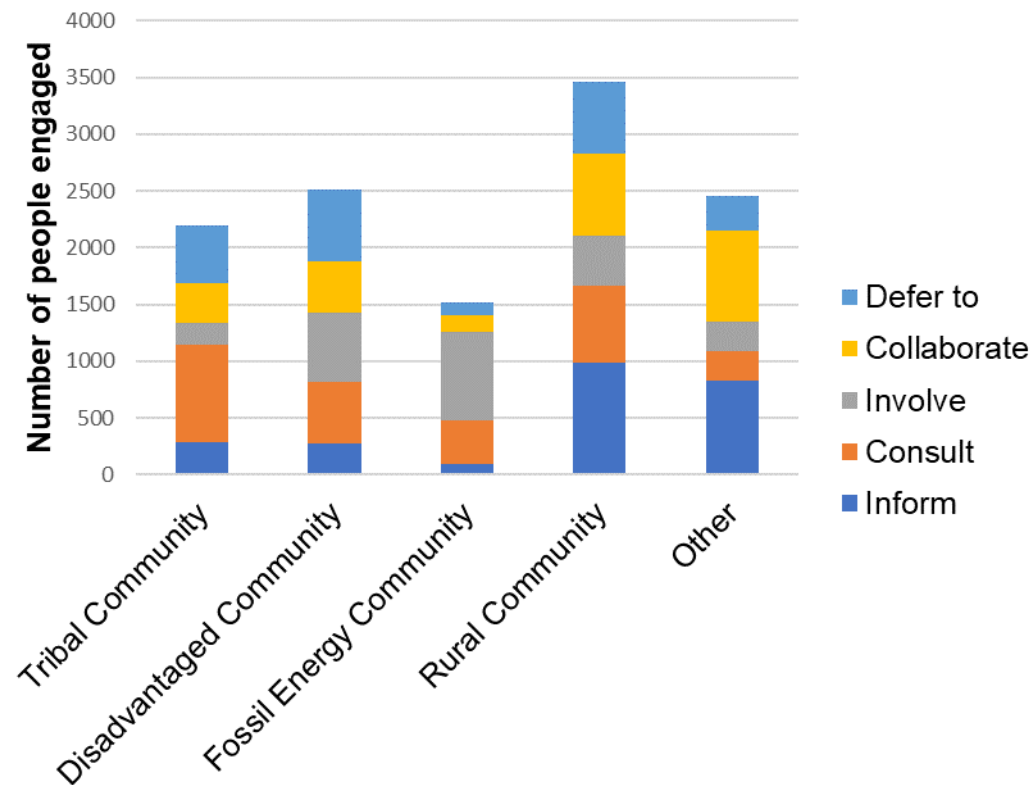


# What can we learn from the information collected in the Annual Report? *Illustrative Examples*

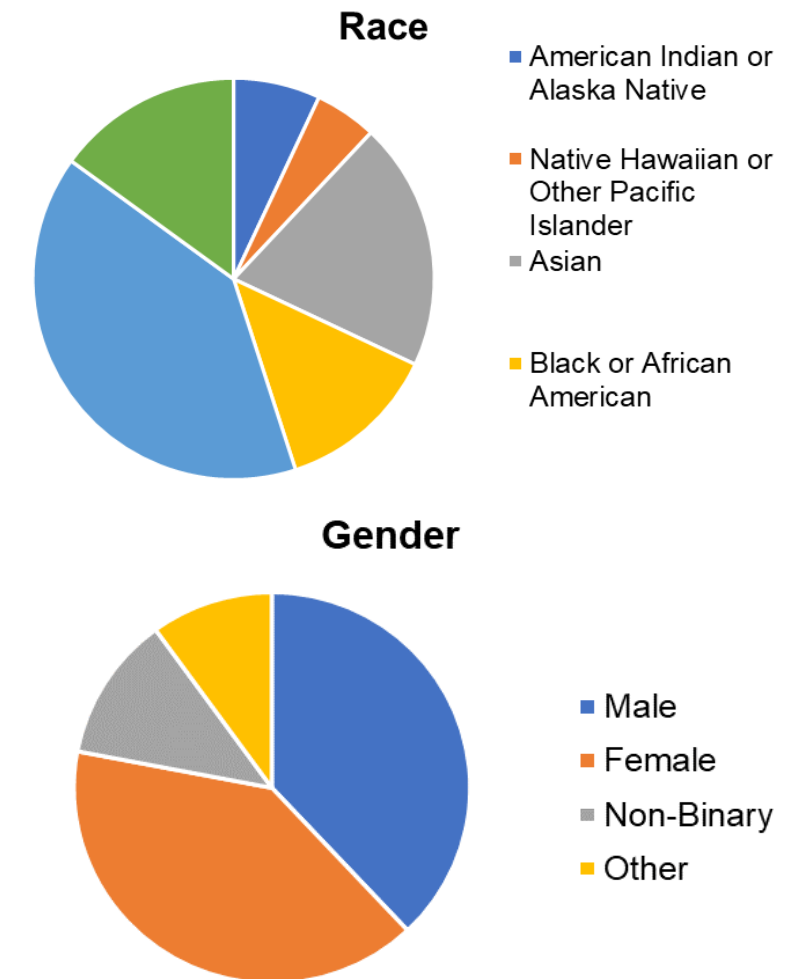
## a) Percent of Subaward Entities that:

- ▶ Pledged neutrality to union forming
- ▶ Have a DEIA plan
- ▶ Have apprenticeship programs

## b) Level of Engagement by Community of Interest



## c) Demographics and Number of People Employed by Investments



# Key Takeaways of Reporting Requirements

- ▶ Understand your resilience goals before selecting metrics
- ▶ Use program objectives to guide metrics selection
- ▶ When possible, sub-divide subrecipient proposals into projects by technology type
- ▶ Before selecting metrics, discuss with subrecipients the type of data they can collect
- ▶ Ensure reporting requirements are passed along to subrecipients
  - Consider including these templates in requests for proposals/applications
- ▶ Please reach out to us if you have any questions

**Extreme disruptive events are going to continue to strain the electric grid and investments beyond what can be funded through IIJA will be needed. As rates go up, being able to find future least-cost but effective solutions starts with collecting the right data.**





**GDO**  
GRID DEPLOYMENT OFFICE

# Thank You!



[www.energy.gov/gdo/gridresilience](http://www.energy.gov/gdo/gridresilience)



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