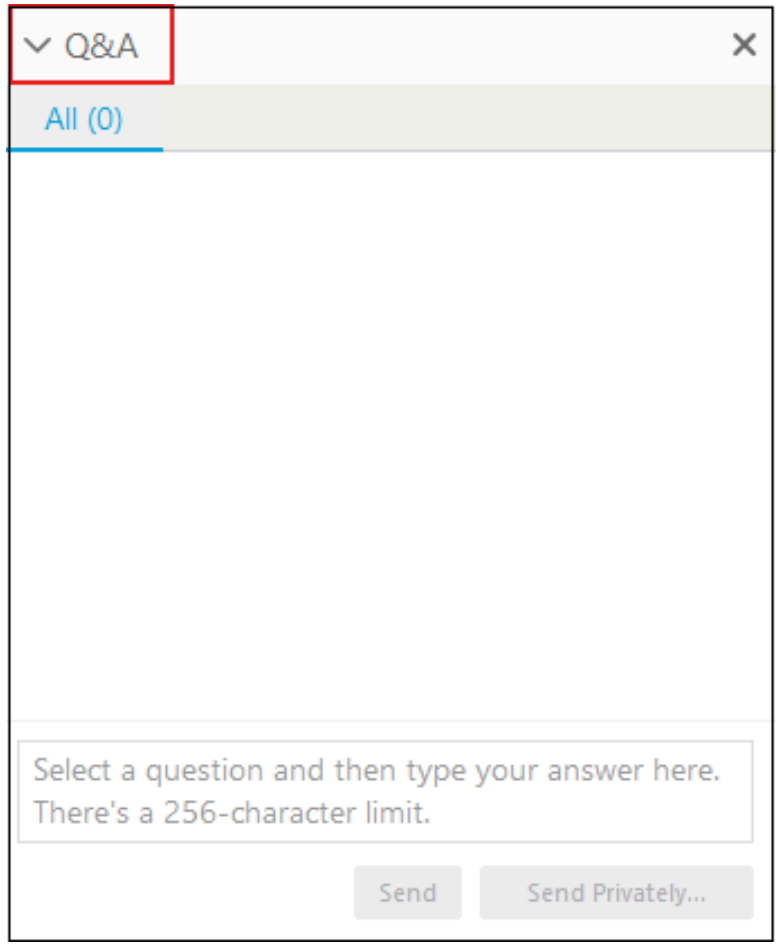
Webinar Instructions

- PowerPoint and webinar recording will be available on the HUD Exchange
- Participants in ‘listen only’ mode
- Submit content related questions in Q&A box on right side of screen
- For technical issues, request assistance through the Chat box

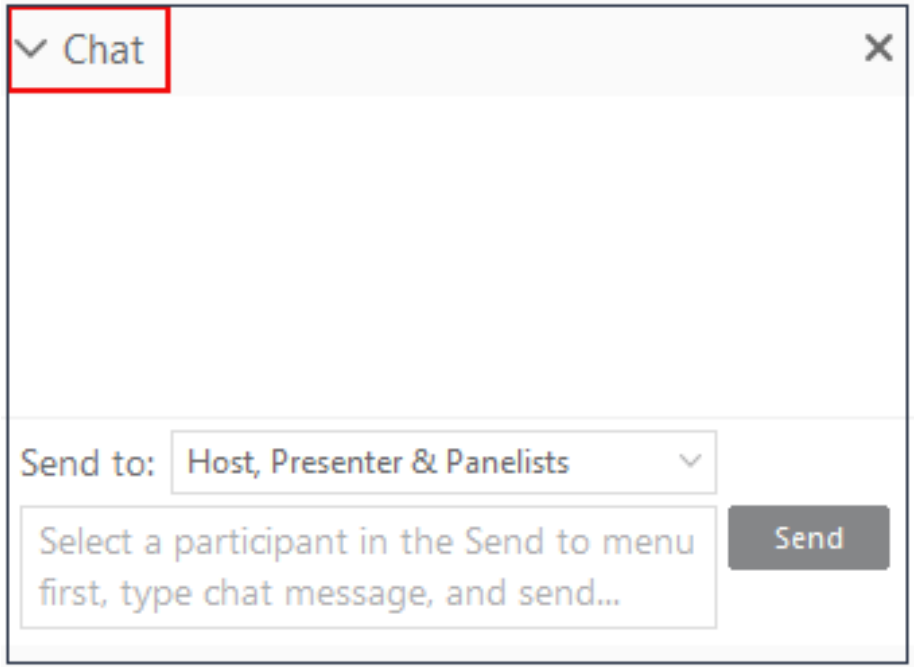
Questions?

- Please submit your content related questions via the Q&A box
- Send to Host, Presenter and Panelists



Technical Issues

- Please submit any technical issue related questions via the Chat box
- Send the message directly to the Host
- Host will work directly with you to resolve those issues



Mitigating Natural Hazard Risks in the Energy Sector:

Opportunities for HUD CDBG-MIT Grantees to Learn Best Practices for Energy Efficiency, Energy Storage, and Renewables

2020 CDBG-MIT Webinar Series

Introductions

Introductions

- Krystal Laymon, U.S. Department of Energy
- Jana Ganion, Blue Lake Rancheria Tribe
- Mikayla Catani, U.S. Department of Housing and Urban Development
- Roosevelt Grant, U.S. Department of Homeland Security, Federal Emergency Management Agency

Presentation Agenda

1. Background
   1. HUD's CDBG-MIT Purpose and Goals
   2. FEMA's Community Lifelines: Energy
   3. Covered Projects and CDBG-MIT Eligible Activities
2. DOE's EERE: Examples of Energy Efficiency and Renewable Energy for Disaster Mitigation Projects
3. Blue Lake Rancheria: EERE Best Practices
4. Value of Including EERE in Action Plans
5. Summary and Resources
6. Question and Answer

Background-HUD's CDBG Mitigation Purpose and Goals

Mikayla Catani, HUD

CDBG-MIT Purpose:

The CDBG Program provides Grantees funds to develop viable communities by providing **decent housing** and a **suitable living environment**, and by **expanding economic opportunities**, principally for low- and moderate-income persons.

CDBG-MIT funds may be used to:

- Support infrastructure projects, housing activities, public services, economic development, disaster preparedness, and planning efforts.
- Increase resilience and reduce or eliminate risk, per HUD's definition of mitigation.
- 50% of CDBG-MIT funds must also be used to benefit low-to-moderate income (LMI) persons.

HUD's Federal Register Notice:

1. Meet the definition of a mitigation activity; 2. Address current and future risks as identified in the grantee's mitigation needs assessment of most impacted and distressed (MID) areas; 3. Be CDBG-eligible activities or otherwise eligible pursuant to a waiver or alternative requirement; and 4. Meet a national objective, including additional criteria for mitigation activities and covered projects

HUD's goals with CDBG-MIT

1. Support data-informed investments, focusing on repetitive loss of property and critical infrastructure

2. Build capacity to comprehensively analyze disaster risks and update hazard mitigation plans

3. Support the adoption of policies that reflect local and regional priorities that will have long-lasting effects on community risk reduction, including risk reduction to community lifelines and decreasing future disaster costs

4. Maximize the impact of funds by encouraging leverage, private/ public partnerships, and coordination w/other federal dollars

Mitigation Needs Assessment:

Mitigation Needs Assessment should include:

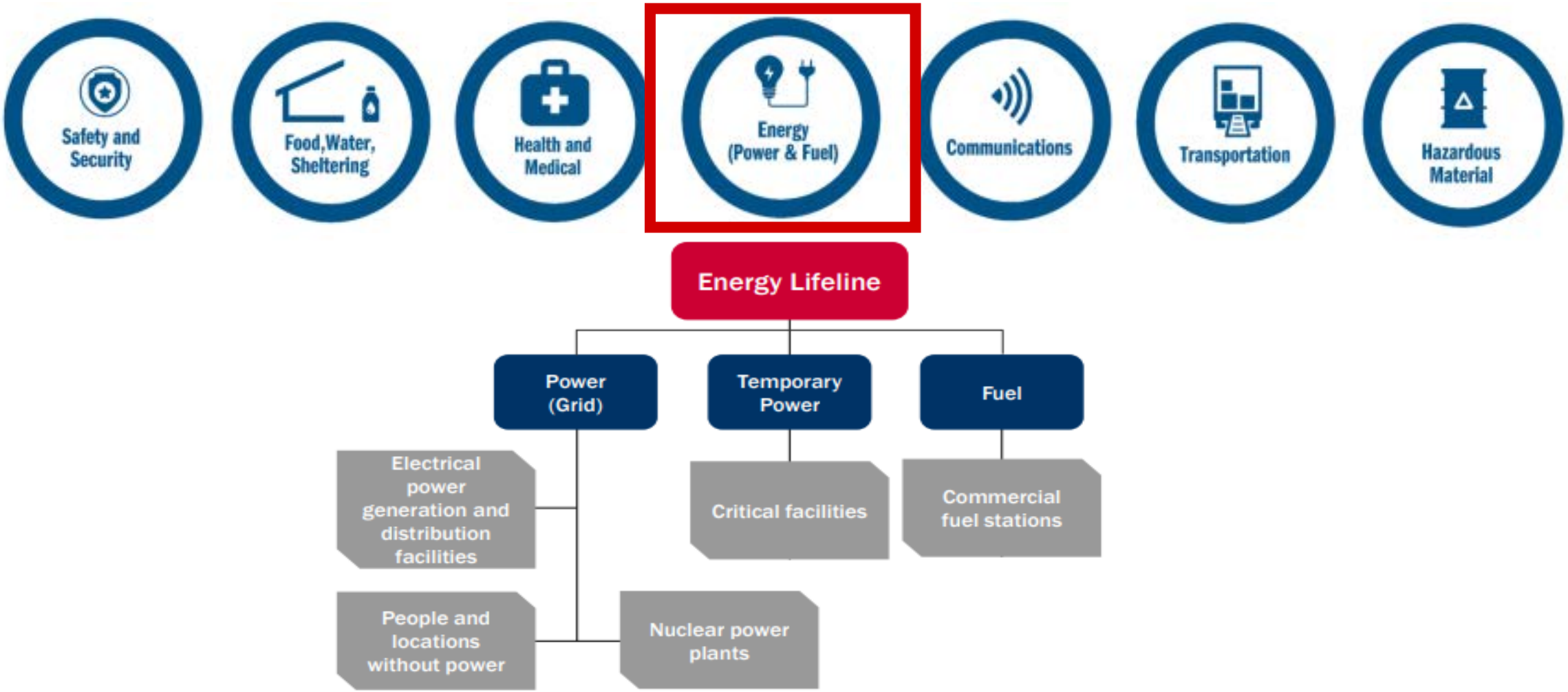
- A risk-based assessment to inform the use of CDBG-MIT funds to meet mitigation needs, considering identified current and future hazards.
- Grantees must assess their mitigation needs in a manner that effectively addresses risks to indispensable services that enable continuous operation of
  - critical business and government functions, and
  - are critical to human health and safety, or economic security.

Background: FEMA's Community Lifelines: Energy

Roosevelt Grant, FEMA

Community Lifelines

FEMA's Energy Lifeline



Energy Lifeline Impact on other Community Lifelines

HUD's Covered Projects and CDBG-MIT Eligible Activities

Roosevelt Grant, FEMA

HUD's CDBG Covered Projects and Eligible Activities

HUD's "Covered Project" Definition: An infrastructure project having a total project cost of $100 million or more, with at least $50 million of CDBG (MIT, DR, NDR) funds. The USVI and PR have lower dollar value thresholds for a Covered Project.

What is an eligible or covered energy project?

- Green Building Standards
  - ENERGY STAR
  - Other energy efficiency certified programs**
- Distributed Energy Resources
  - Microgrids
  - Solar+Storage
  - Combined Heat and Power (CHP)

** LEED, Enterprise Green Communities, or ICC-700 National Green Building Standard, etc.

Developing Resilient Buildings using Energy

Grantees will decide where to invest based the mitigation needs assessment for CDBG-MIT. HUD's grantees can assess where to invest these technologies which will be listed in a grantee's Action Plan.

Where would these technologies be beneficial?

- Designated Disaster Shelters
- Schools
- Community Centers
- Hospitals
- Transportation Hubs
- Police/Fire Stations
- Critical infrastructure**

**Grantees decide through their Action Plan what is deemed critical infrastructure

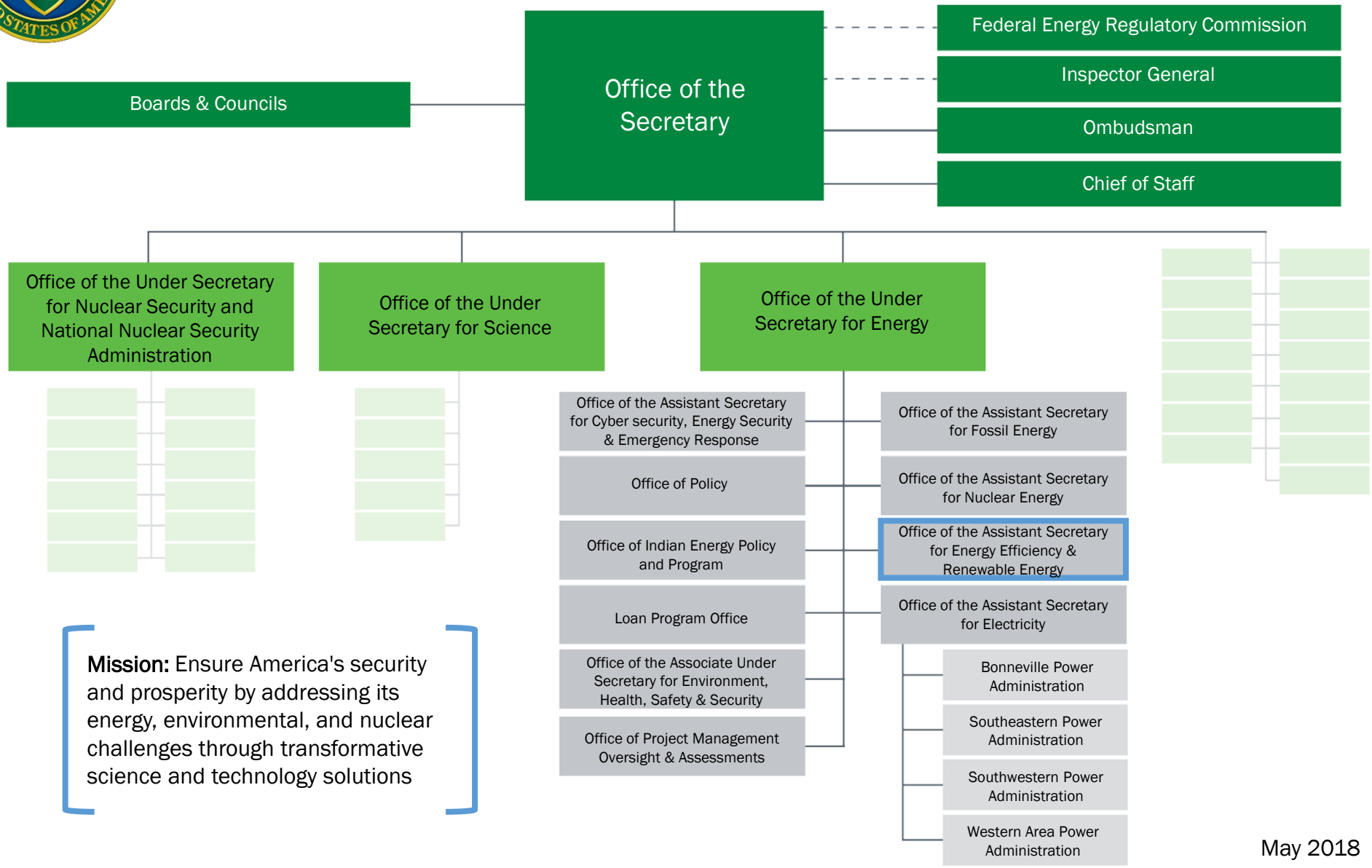
U.S. DOE's EERE: Examples of Energy Efficiency and Renewable Energy Disaster Mitigation Projects

Krystal Laymon, U.S. Department of Energy

U.S. DOE Webinars in this Series

May 21	Best Practices for Energy Efficiency, Energy Storage, and Renewables	U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy
June 18	Building Energy Efficiency: Bolster Affordability and Resilience in Action Plans	U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy
June 25	Critical Energy Infrastructure Resilience to All Hazards	U.S. DEPARTMENT OF ENERGY | OFFICE OF ELECTRICITY

U.S. Department of Energy

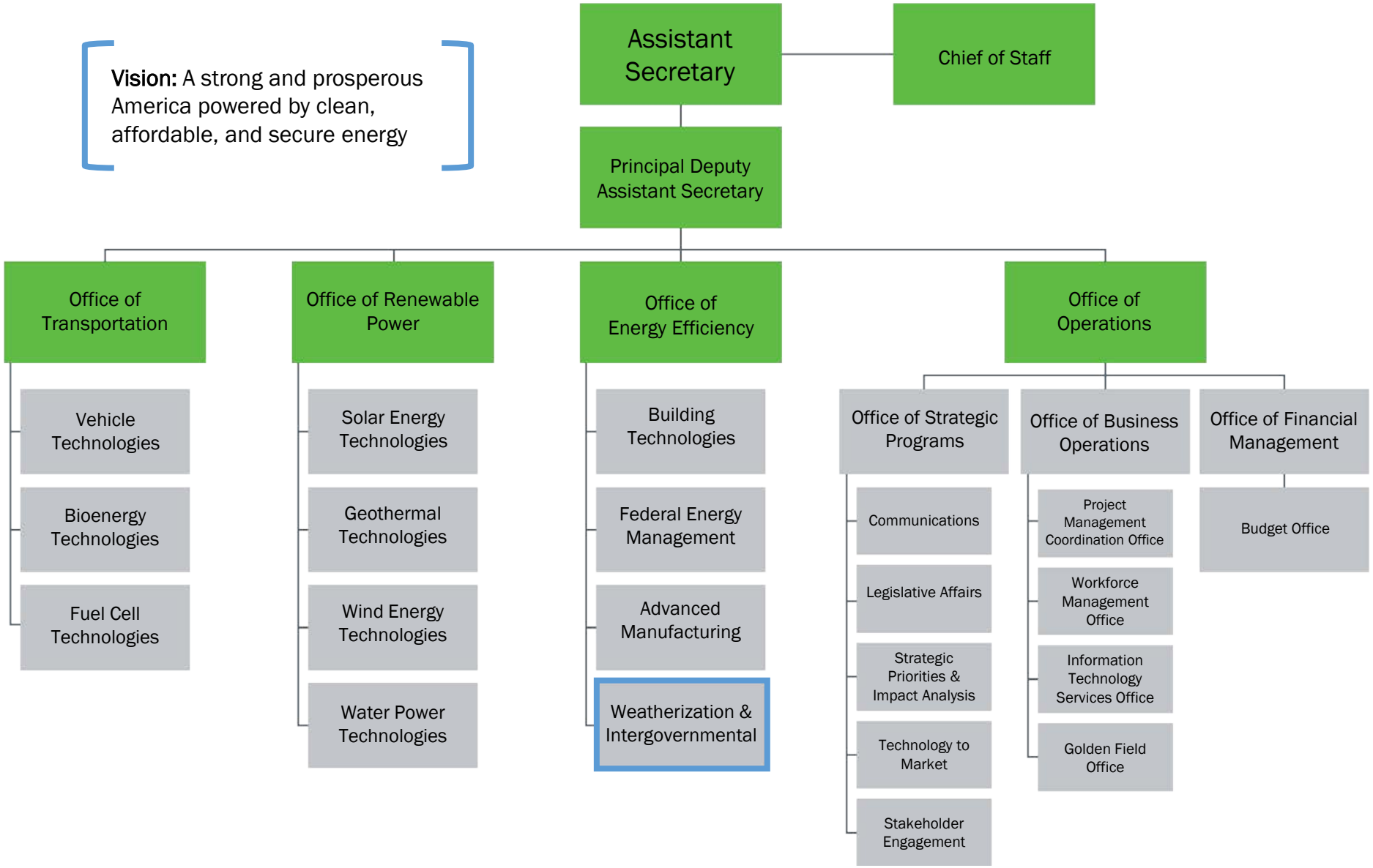


Mission: Ensure America's security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions

May 2018

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Vision: A strong and prosperous America powered by clean, affordable, and secure energy



U.S. Department of Energy's State Energy Program

STATE ENERGY PROGRAM (SEP)

SEP provides funding and technical assistance to 56 states, territories, and the District of Columbia to

- Enhance energy security,
- Advance state-led energy initiatives, and
- Maximize the benefits of increasing energy efficiency.

DOE State Energy Program: Puerto Rico PV & Storage Energy Resilience Project

Project Year: 2018

SEP Project Cost: $239,000

Goal: To increase residential energy resiliency and reduce energy consumption from the grid.

- **20 homes** were chosen for **PV and battery storage** based on the following criteria:
  - Previously weatherized to reduce energy consumption
  - Energy grid vulnerability (after Hurricane Maria event)
- Total 54kw of PV solar installed (2.7kw per home)
- Total battery cycling capacity 80 hours per home

A PV and battery storage system installed in Puerto Rico as part of this project

GOBIERNO DE PUERTO RICO
Departamento de Desarrollo Económico y Comercio

DOE State Energy Program: Puerto Rico PV & Storage Energy Resilience Project

Impacts:

- Participating home energy use has decreased by an average of 10–15 kWh.
- Participants feel safer and more confident in having electricity when there is an outage.
- Passive survivability has increased for participating home residents.

A PV and battery storage system installed in Puerto Rico as part of this project

GOBIERNO DE PUERTO RICO
Departamento de Desarrollo Económico y Comercio

DOE SEP: Florida SunSmart Schools & Emergency Shelters

Project Year: 2009

SEP Project Cost: $9.84 million with ~$900,000 in matching funds from Florida Utilities.

Goals: Reduce energy costs for schools and increase community resilience.

- Florida outfitted **117 schools with solar systems** that double as emergency shelters with 10 kW bimodal photovoltaic (PV) arrays with battery back-up.
- Installed more than a megawatt of solar that produce an average of 12.8 MWh annually.
- Educational kits for teachers:
  - STEM (science, technology, engineering, and math) content was designed for students to learn about renewable energy
  - Workshops for teachers and facility managers

The SunSmart Program has installed solar power systems at schools designated as emergency shelters throughout Florida.

https://www.energy.gov/eere/wipo/articles/sep-success-story-floridas-sunsmart-program-helps-provide-power-schools-when

DOE SEP: Florida SunSmart Schools & Emergency Shelters

Impacts:

- The systems have been activated during four hurricanes: Hermine, Matthew, Irma, and Michael.
- There were 40 SunSmart Schools E-shelters activated during Hurricane Irma:
  - 32 of the 40 schools' lost power from the electric grid and utilized the battery system for backup power.
- Annual savings of approximately $133,346 for the entire project or $1,258 per school.
- Over 450 Florida teachers and 50,000 students have received education in the science and use of renewable energy technologies.

Map of Florida SunSmart Schools and Emergency Shelters

Blue Lake Rancheria Energy Best Practice

Jana Ganion, Blue Lake Rancheria Tribe

Climate-smart Community Resilience: Microgrids at Blue Lake Rancheria

- Introduction
- Resilience investment rationale
- Overall resilience strategy
- Microgrid details
- How are microgrids working?
- Building microgrids – notes from the field
- Q&A

Blue Lake Rancheria Overview

- Tribal government; nation; community
- Federally recognized 1908
- Terminated 1958; Restored 1983
- Governed by elected, five-member Tribal Business Council
- ~100 acres of trust land; spans the Mad River
- Tribal Utility Authority (2013)
- Top 10 employers in rural Humboldt County
  - ~400 employees

Clean Energy Policy and Outreach

- 2020-current Co-chair, U.S. Dept. of Energy, Indian Country Energy and Infrastructure Working Group
- 2020-current Pacific Gas and Electric Company Sustainability Advisory Council
- 2019-current NCAI Climate Action Task Force Technical Committee
- 2018-current Tribal Rep, SB 350 CPUC/CEC Disadvantaged Communities Advisory Group
- 2018-current U.S. BOEM CA Intergovernmental Renewable Energy Task Force
- 2018-current CA Air Resources Board AB 617 Community Air Protection Program Consultation Group
- 2015-current CA Integrated Climate Adaptation & Resiliency Program Technical Advisory Council
- 2013-current U.S. Dept. of Energy, Indian Country Energy and Infrastructure Working Group

Resilience Investment Rationale - Global

- 2019: highest ocean temperatures ever recorded (NOAA)
- 2010-2019: warmest decade ever recorded (NOAA)
- Antarctic and Greenland ice sheets: contain ~220 feet of sea level rise (SLR); melt is early and accelerating (NASA)
- CO2 concentrations are at highest levels in human history, over 415 ppm, and rate of increase is accelerating (NOAA)
- Larger storms; wildfires
- Persistent drought; more extreme heat
- Species die-offs (e.g., pollinators, Australia wildfires)
- Feedback loops are accelerating
  - Arctic permafrost melt could release ~1,600 gigatons of CO2 (remaining global budget is ~360 gigatons) (NatGeo)

Photo Credit: H. Patton, Flickr Creative Commons

Resilience Investment Rationale - Local

- Global climate change *amplifies* local conditions
- Extended drought
- Unpredictable, volatile weather, extreme storms
  - Nuisance power outages are common, but worsening
    - One in November 2019, One in January 2020 (entire county)
  - Arcata, CA ‘rain bomb’ 9/2019: ~2” in 30 minutes
- Increased wildfires and air pollution
- “Public Safety Power Shutoffs” (PSPS)
  - Planned outages to prevent wildfires from electrical grid; projected to last 2-10 days; two PSPS events in Oct. 2019

2017 wildfire adjacent to the Tribe.
Photo credit: CalTrans

Resilience Investment Rationale - Local

- Landslides | Floods
  - Disrupts local supply chains (food, diesel / gas / propane)
  - Can’t rely on liquid fuels for resilience
- Sea Level Rise (SLR)
  - Humboldt County has fastest SLR on the Pacific Coast
  - Impacts to local power plants and other infrastructure
  - Threatens local nuclear waste repository

Simultaneous landslides across two (of three) main arterials to the region.
Photo credit: CalTrans

Resilience Investment Rationale - Local

- Serious earthquake / tsunami risk
- Cascadia Subduction Zone, Mendocino Fault, Gorda Plate, Pacific Plate, North American Plate all converge at the 'triple junction,' directly offshore from Humboldt County.
- Can achieve >9.0 earthquake
- Entire Pacific Coast can be simultaneously impacted
- Due to relatively low population, our region may be lower priority for response

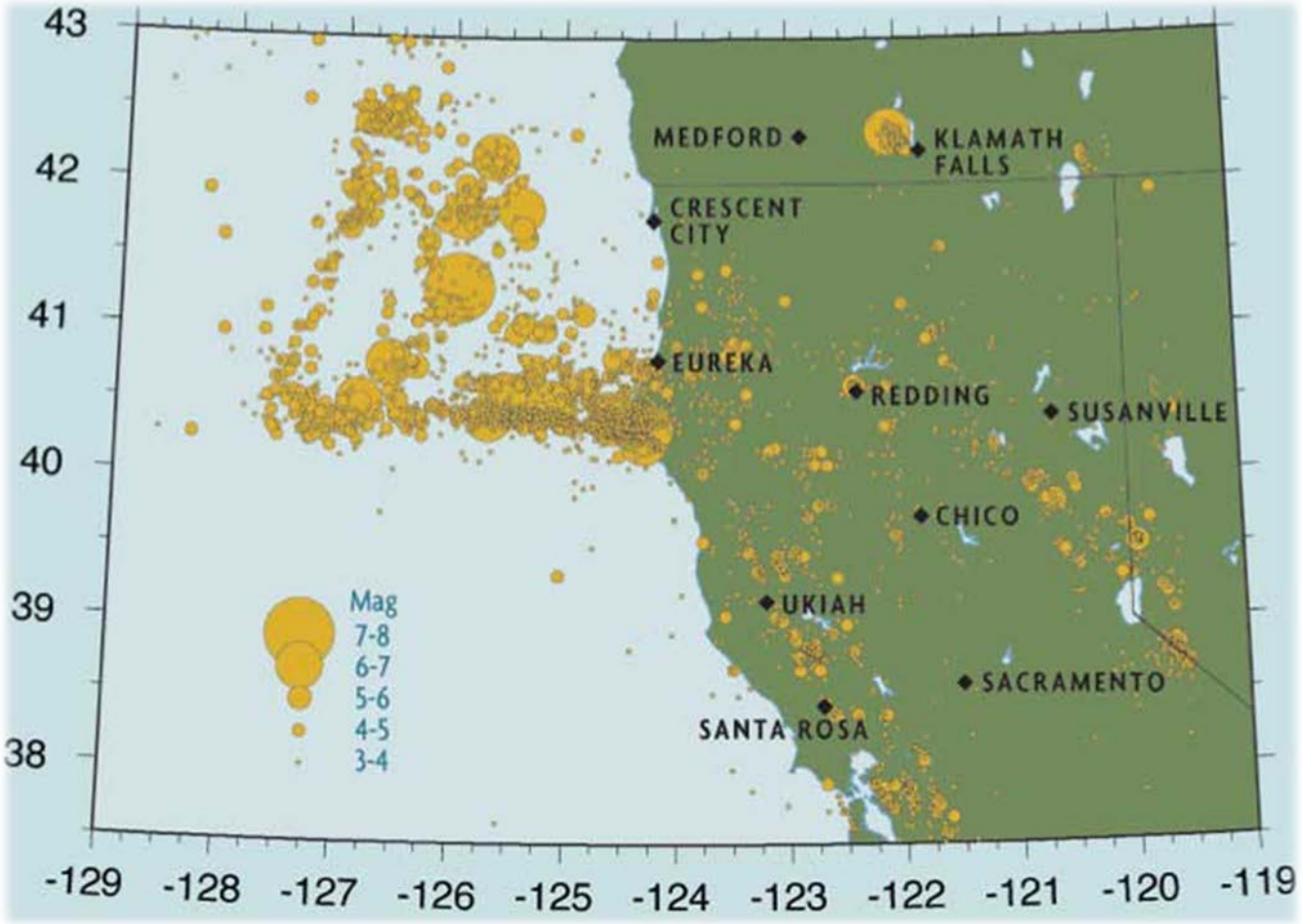


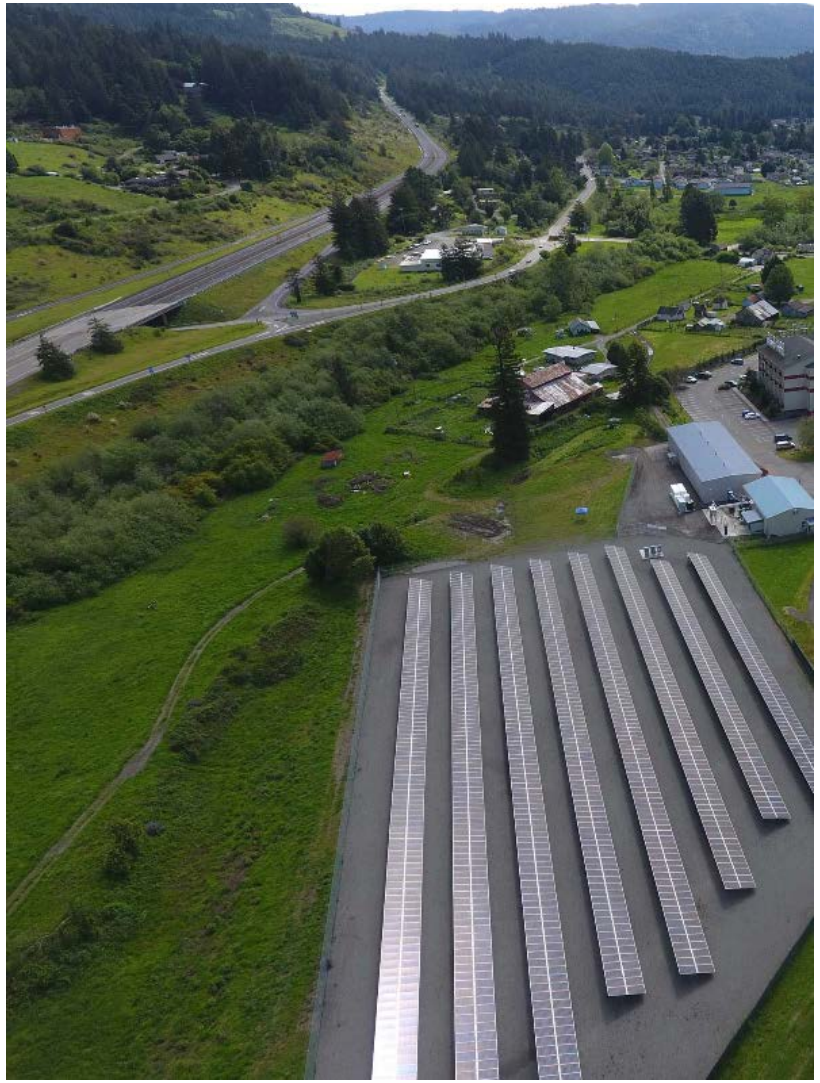
Image credit: Humboldt State University

Blue Lake Rancheria Resilience Strategy

- Transition to "Climate-smart" Infrastructure ASAP
  - Improve continuity of operations (COOP), community health, resilience
  - Economy-enabling investments; lower, predictable costs; more local capacity and jobs
- "Lifeline Sector" Priorities
  - **Energy**: efficiency + low-carbon microgrids; energy supports all lifelines
  - **Water**: smart water grid (latest monitoring tech, emergency water supplies)
  - **Transportation**: electric fleets and charging stations; biodiesel manufacturing
  - **Communication/IT**: improved connectivity, broadband, emergency communications
  - **Food**: onsite production, improved nutrition and food security

Blue Lake Rancheria Resilience Strategy

- Zero-carbon Solutions
  - Pairing climate mitigation + adaptation
    - Mitigation = reducing climate-forcing emissions
    - Adaptation = dealing with impacts already here, with zero carbon solutions *to avoid making the underlying climate problem worse*.
- Zero greenhouse gas emissions by 2030

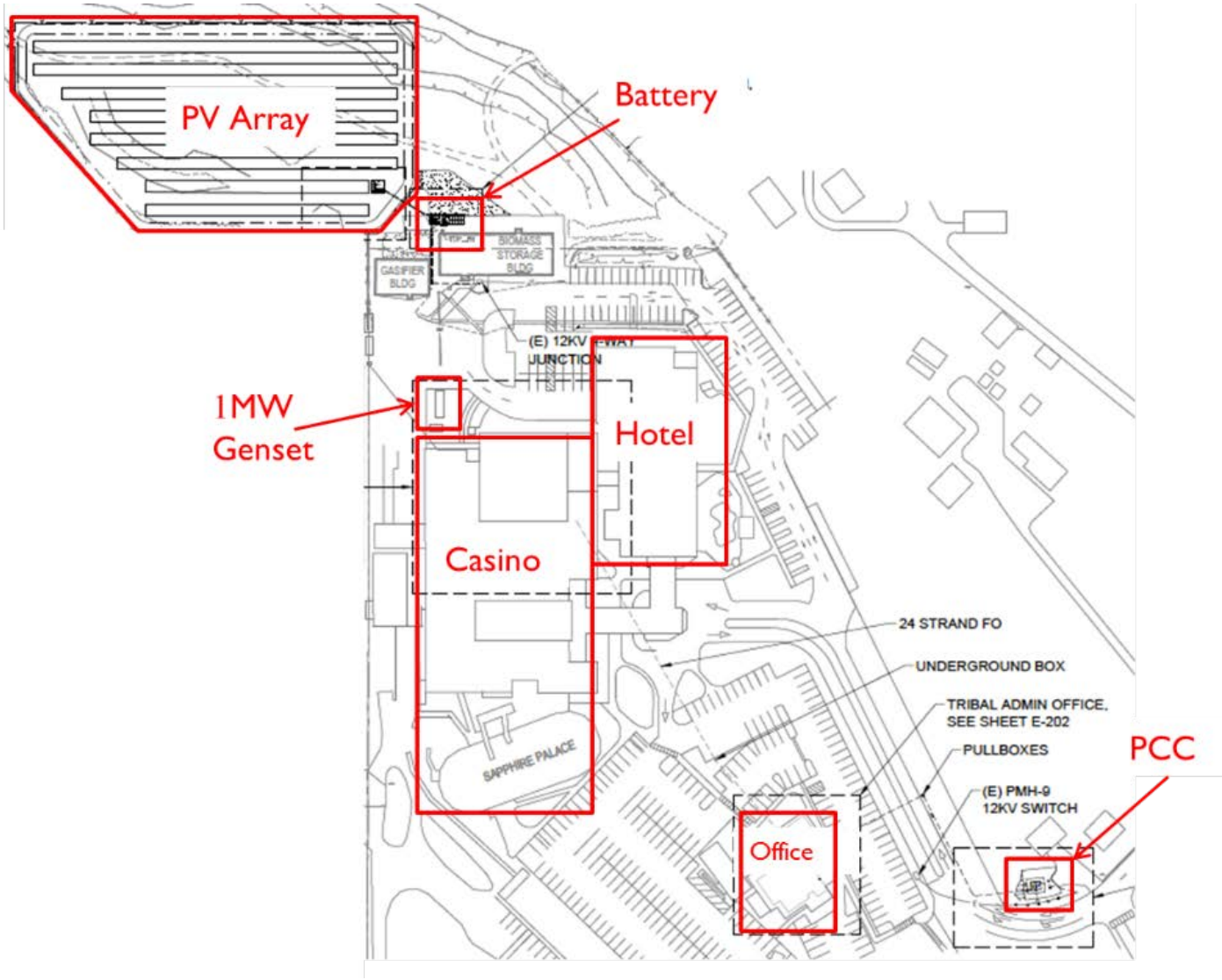


Low-carbon Microgrids at Blue Lake Rancheria

- Community scale – in operation since 2017
- Facility scale – energized January 2020, full operation by ~May 2020
- Campus scale – in design, full operation by 2021, will include ~10 residences

Community Scale Microgrid

- Public/private partnership - Tribe, Schatz Energy Research Center, PG&E, Siemens, Tesla, CEC, CPUC, Idaho National Lab, others
- Funded by the Tribe, and a CEC R&D grant
- Powers tribal government offices, economic enterprises, critical lifeline sectors
- Can seamlessly island from and reconnect to grid
- Solar PV; battery storage; legacy diesel gensets (used as a last resort)
- Annual energy cost savings ~$200,000
- Annual greenhouse gas reductions ~200 tons



Schatz Energy Research Center

Facility Scale Microgrid “Solar+”

- Public/private partnership - Tribe, Schatz Energy Research Center, PG&E, SunPower, Tesla, CEC, Lawrence Berkeley Nat. Lab, others
- Funded by the Tribe and a CEC R&D grant
- Serves a fuel station / convenience store complex
- Solar PV (60kW) + storage (106kw/169kwh); islands from larger grid; advanced building control (efficiency, grid balance)
- Creates a replicable, low-carbon ‘resilience package’
- In normal operations: lowers costs, GHGs, improves COOP
- In emergencies: supplies lifeline sectors to public and responders
- Important where these facilities are only resource for lifeline sectors.

Solar+ at Blue Lake Rancheria

2018 East Coast hurricanes cause lines at fuel stations. Photo: Theindychannel.com

Climate-smart Infrastructure is Working

- Public Safety Power Shutoff (PSPS) - 10/9/19
  - Grid outage to prevent wildfires; lasted ~28 hours
  - 30 counties / millions of people across northern California
- With energy sector resilience and operational deployment, the Tribe:
  - Opened its EOC, followed protocols
  - Served ~10,000 people (~10% of County)
  - Supplied general public and response agencies:
    - Electricity, gas/diesel, propane, ice, water, food, internet, device charging, ATMs
    - Critical medical housing in hotel; *credited with saving four lives*
    - Refrigeration to keep medicines cold
    - Electric vehicle (EV) charging stations
    - Community Support Center; Business Center

Climate-smart Microgrids as Solutions

- Build low-carbon microgrids for stacked benefits
  - Resilience, emergency preparedness/response, new jobs, pollution reduction, climate solution, maintain critical infrastructure; support lifeline sectors
  - Microgrid knowledge transfer: learn from successful projects; avoid inappropriate technology, increase standardization, lower capital / O&M costs; increase R&D
- How to best operate and manage microgrids?
  - Regional expertise/capacity, ensure safety and coordinated grid benefits; what are utilities' roles?
- How is microgrid resilience valued?
  - In normal and emergency operations; climate targets; COOP

Building Microgrids

Feasibility & Design

- Tribal government strategy
  - Planning
  - Project structure
    - Tribal utility authority?
    - Project management company (EPC)
    - 3rd party partnerships
  - Project expertise
    - Internal and external capacities
      - Will guide complexity and automation
    - Integration engineering
  - Project funding
    - Pre-development; development; testing / commissioning
    - Patient payback

O&M considerations

- Internal and external capacities
  - Will guide complexity and automation
- Weather forecasting services
- Rate changes – continual economic optimization
- Ongoing engineering
- IT and Facilities expertise
  - E.g., Electrical microgrids require experts at level of voltage within microgrid
- Microgrid, building, and IT software upgrades
- Generation and storage expansion

Final Thoughts

- Tribe seemed to arrive “just in time” with appropriate resilience for disasters -- due to effective governance, planning, and deployment.
- Tribe’s strategy centering climate crisis, pairing mitigation + adaptation has worked
  - Climate science, data, and models are proving correct, and *conservative*.
- Tribe is creating a manageable, just transition to a climate-smart community.


The Washington Post

Amid shut-off woes, a beacon of energy

A Native American tribe has insulated itself from California’s blackouts by creating a microgrid utility

Select Resilience Recognition

2019 “Green Power Leadership Award (Direct Project Engagement)” U.S. EPA

2019 “Microgrids for Greater Good Award (Grid-Connected)” Microgrid Knowledge

2018 “Project of the Year (DER Integration)” POWERGRID International, DistribuTECH

2017 “Whole Community Preparedness Award” FEMA

2015-2016 “Climate Action Champion” White House and U.S. Department of Energy

Value of EERE in Action Plans

Krystal Laymon, U.S. Department of Energy

Value of EERE in Action Plans: Energy Efficiency

Energy efficiency measures are a **powerful complement** to mitigate against natural disasters and **contribute to resilience** through:

- Increased passive survivability
- Enhanced resilience during power outage
- Long-Lasting backup power from distributed generation
- Improved moisture (mold) and air quality control (air pollutants)
- Reduce risk of equipment damage during disruption
- Decrease energy burden, reduce health and environmental impacts, and deliver supplementary benefits

Value of EERE in Action Plans: Renewable Energy

Renewable energy technologies are a **powerful complement** to mitigate against natural disasters and **contribute to resilience** through:

- Solar PV + Storage can provide back up power to support critical infrastructure services during grid outages
- Microgrid “islanding” enables independent grid operations to provide power and reduce stress across the energy system
- Can serve multiple off-takers including households, businesses, non-profit and municipal sites
- Decrease energy burden, reduce health and environmental impacts, and deliver supplementary benefits

Example of Energy Lifeline in an Action Plan

<u>California</u>

Intends to promote high quality, durable, and energy efficient construction methods by utilizing California's "2019 Building Energy Efficiency Standards" that require all newly constructed homes to include **solar photovoltaic systems**.

<u>City of Columbia (South Carolina)</u>

Promotes high quality, durable, sustainable, mold-resistant, and **energy-efficiency construction** methods for all activities funded with CDBG+MIT resources.

Summary

Roosevelt Grant, FEMA

Value of EERE in Action Plans: Meeting CDBG-MIT's Goals

❖ **HUD Goal 1:** Support data-informed investments, focusing on repetitive loss of property and critical infrastructure

✓ **Example**: Various EERE projects (solar+storage)

❖ **HUD Goal 2:** Build capacity to comprehensively analyze disaster risks and update hazard mitigation plans

✓ **Example:** EERE Planning**,** EERE Resilience Roadmaps

❖ **HUD Goal 3:** Support the adoption of policies that reflect local and regional priorities that will have long-lasting effects on community risk reduction, including risk reduction to community lifelines and decreasing future disaster costs

✓ **Example**: Energy efficiency building codes

❖ **HUD Goal 4:** Maximize the impact of funds by encouraging leverage, private/ public partnerships, and coordination w/other federal dollars

✓ **Example:** Leveraging federal DOE and FEMA funds to achieve your goals

Resources

HUD CDBG-MIT Resources

- Community Development Block Grant Mitigation Program: https://www.hudexchange.info/programs/cdbg-mit/
- HUD CDBG-Mitigation Notice: https://files.hudexchange.info/resources/documents/FR-6109-N-02-CDBG-Mitigation-Notice.pdf
- HUD CDBG-Mitigation 2019 Webinar series: https://www.hudexchange.info/news/cdbg-mit-webinar-series/

FEMA Resources

- FEMA Hazard Mitigation Plan Resources website: https://www.fema.gov/hazard-mitigation-planning-resources
- FEMA State Mitigation Planning Resources website: https://www.fema.gov/state-mitigation-planning-resources
- FEMA State Mitigation Planning Key Topics Bulletins: https://www.fema.gov/media-library/assets/documents/115780
- FEMA Local Mitigation Planning Resources website: https://www.fema.gov/local-mitigation-planning-resources
- FEMA National Response Framework:

https://www.fema.gov/media-library/assets/documents/117791

DOE's EERE Resources

- Weatherization and Intergovernmental Programs Office (WIP) Fact Sheet: https://www.energy.gov/sites/prod/files/2019/08/f65/EERE_WIP_Overviewv6.pdf
- State Energy Program Fact Sheet: https://www.energy.gov/sites/prod/files/2019/06/f64/wip-sep-factsheet-0619.pdf
- Energy Efficiency and Renewable Energy Resources for State and Local Leaders: https://www.energy.gov/sites/prod/files/2019/07/f64/Summer2019-SLSC-resource-guide.pdf
- DOE's Better Buildings Initiative's resilience webpage: https://betterbuildingsinitiative.energy.gov/resilience
- How Distributed Energy Resources Can Improve Resilience in Public Buildings: Three Case Studies and a Step-by-Step Guide: https://www.energy.gov/eere/slsc/downloads/how-distributed-energy-resources-can-improve-resilience-public-buildings-three
- Energy Efficiency and Distributed Generation for Resilience: Withstanding Grid Outages for Less: https://www.energy.gov/sites/prod/files/2019/06/f64/EEDG-Resilience.PDF

DOE's EERE Resources

- Low-income Energy Affordability Data (LEAD) Tool
https://www.energy.gov/eere/slsc/maps/lead-tool

- Clean Energy for Low-income Communities Accelerator (CELICA)
https://betterbuildingssolutioncenter.energy.gov/CELICA-Toolkit

- Combined Heat and Power (CHP) for Resiliency Accelerator
https://betterbuildingssolutioncenter.energy.gov/accelerators/combined-heat-and-power-resiliency

- Presentation on DOE's Resiliency Roundtable
https://betterbuildingssolutioncenter.energy.gov/sites/default/files/Resilience_Roundtable_Pt_1.pdf

HUD Energy Related Resources

- Energy Desk Book: https://www.huduser.gov/portal/publications/destech/energybook.html
- HUD Programs that support energy efficiency: https://www.hud.gov/program_offices/economic_development/eegb/programs
- Energy and Performance Information Center (EPIC): https://portalapps.hud.gov/app_epic/
- HUD Energy Efficiency Program Guide: https://www.hud.gov/sites/documents/21647_GUIDE.PDF
- Financial Incentives for Home Energy-Efficiency Improvements: https://www.huduser.gov/portal/consumer/financial_incentives.html
- HUD's Office of Environment and Energy: https://www.hud.gov/topics/energy
- Energy Codes for HUD-Assisted and FHA-Insured Properties: https://www.hud.gov/program_offices/economic_development/eegb/standards
- Combining Energy Efficiency and Disaster Mitigation Efforts in Residential Properties: https://www.huduser.gov/portal/periodicals/em/spring17/highlight2.html

Microgrid Development Resources

- U.S. DOE Office of Indian Energy Technical Assistance
  - https://www.energy.gov/indianenergy/technical-assistance
- U.S. DOE Office of Indian Energy Policy and Programs Annual Grant Funding
  - https://www.energy.gov/articles/doe-announces-15-million-deploy-energy-infrastructure-tribal-lands
- U.S. Department of Interior
  - https://www.bia.gov/as-ia/ieed
  - https://www.bia.gov/as-ia/ieed/division-energy-and-mineral-development/grants
- Department of Agriculture (USDA)
  - https://www.rd.usda.gov/programs-services/programs-services-tribes
  - https://www.rd.usda.gov/files/508_RD_TribalReport_2019.pdf
- Other funding sources
  - https://www.energy.gov/indianenergy/energy-development-assistance-tool

Further Resources

- *Washington Post* article on microgrid and resilience: https://www.washingtonpost.com/climate-solutions/2020/01/01/amid-shut-off-woes-beacon-energy/?arc404=true
- Technical report on microgrid: https://ww2.energy.ca.gov/2019publications/CEC-500-2019-011/CEC-500-2019-011.pdf
- *T&D World* article on microgrid: https://www.tdworld.com/grid-innovations/smart-grid/article/20971186/microgrid-serves-multiple-purposes
- *Reasons to be Cheerful* article on Blue Lake Rancheria resilience: https://reasonstobecheerful.world/power-struggle/
- NOAA Climate Website https://www.noaa.gov/climate
- Intergovernmental Panel on Climate Change Special Report https://www.ipcc.ch/sr15/
- United Nations Environment Programme *Emissions Gap Report (2019)* https://wedocs.unep.org/bitstream/handle/20.500.11822/30798/EGR19ESEN.pdf?sequence=13
- Rhodium Group Climate Risk Data https://rhg.com/impact/climate-risk/

Thank you for your participation!

Krystal Laymon
U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Policy Advisor
Krystal.Laymon@ee.doe.gov

Jana Ganion
Blue Lake Rancheria, California (a federally recognized tribal government)
Sustainability and Government Affairs Director
jganion@bluelakerancheria-nsn.gov

Mikayla Catani
U.S. Department of Housing and Urban Development
Disaster Recovery and Special Issues Division, Office of Block Grant Assistance
Community Planning and Development Specialist
Mikayla.M.Catani@hud.gov

Thank you!

- Additional Contact Info
  - HUD Policy Unit, DRSIPolicyUnit@hud.gov

Questions????