

# Closing the Native American Reservation Electricity Gap; The Yurok Tribe's Trailblazing Leadership to Provide Energy Access and Energy Justice



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# The Native American Reservation Electricity Gap

- In the continental United States, Native Americans living on reservations are the Americans most likely to lack electricity access in the twenty-first century.
- The U.S. Energy Information Administration reported in 2000 that 14% of households on Native American reservations have no access to electricity, compared to 1.4% nationally
- The Native American Reservation Electricity Gap is not well quantified or documented.

# The Native American Reservation Electricity Gap

- Javier Kinney, Esq., Executive Director of the Yurok Tribe, observed in a 2013 interview that in the Weitchpec area of the Yurok Reservation:
  - *Swaths of homes don't have electricity, phone service, or Internet connectivity*
- Tracy Stanhoff, President of the American Indian Chamber of Commerce of California, observed that utility infrastructure and services often stop just outside the border of many Native American reservations

# California is Home to 109 Federally Recognized Tribes



Electricity and Communications Access has been Limited in California's Klamath River Region and Absent in Many Parts of the Yurok Reservation



# Themes Driving the Electricity, Energy Access, and Energy Justice Gaps

- Federal Policies to:
- **Fracture:** Fracture Tribal Identity
- **Fragment:** Fragment Tribal Landholding
- **Funnel:** Funnel Tribal Resources
- **Federalism:** States control electric distribution lines and service but did not consider Native American Reservation needs in shift from universal service to cost-recovery policies.
- The Federal Government has never made providing Infrastructure, Electricity, Telecom, Water Services, and other services, on Native American Reservations a policy priority.
- Federal Trust duties to forest management and laws requiring educational and health equity require federal action to support tribes consistent with evolving standards

# Understanding the Native American Reservation Electricity Gap in the Context of Reservation Formation

- In 1855 the federal government established the Klamath River Indian Reservation and ordered several tribes including the Yurok, Hoopa, and Karuk to live there
- In 1864, the federal government established the Hoopa Valley Reservation. The “Hoopa Square” in the heart of the Hoopa Tribe’s homeland on the Trinity River south of the Klamath River marked the Hoopa Valley Reservation’s initial boundaries.
- President Grant’s 1876 Executive Order recognized the Hoopa Valley Reservation more than a decade later.
- In 1891, President Harrison extended the Hoopa Valley Reservation to include “the Addition” where most Yurok lived along the Klamath River.

# Drivers of the Native American Reservation Electricity and Infrastructure Gap

- **Funnel Tribal Resources to Others**
- The 1951 Western RECONNAISSANCE report that proposed the Ah Pah dam on the Klamath River noted “only relatively minor improvements now exist in this area.”
- The paucity of electric or telephone lines in the Hoopa Valley Reservation contributed to the perception of “only relatively minor improvements” then existing.
- The hydroelectric generator would need transmission facilities designed for a dam.
- Local distribution facilities would have to be dismantled to complete the project.
- Coveting this area for dam construction, the federal government had little incentive to fund construction of electric distribution lines to serve tribes and local residents.



# Drivers of the Native American Reservation Electricity and Infrastructure Gap



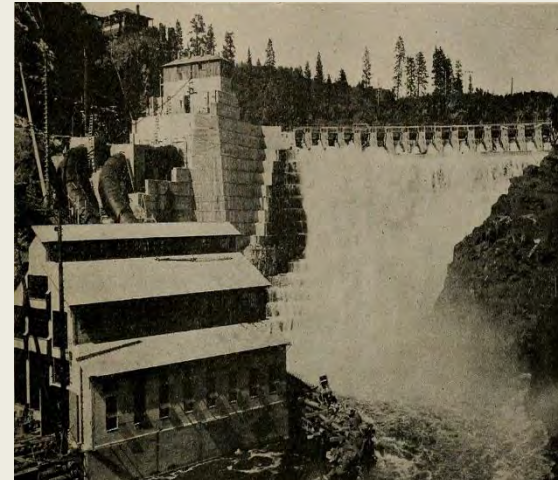
- **Funnel Tribal Resources to Others**
- **The “Dam Period”** in the early twentieth century reflected the federal government’s view of land and water as “something to be tamed and brought under control.”
- The Western Reconnaissance mission to investigate Klamath River water resources launched in 1948 to determine “what surpluses to ultimate local needs might exist in these [Klamath River] streams, and, if any were established, to appraise the feasibility of transferring portions thereof to areas of deficient supply.”
- This question was framed to create a self-fulfilling prophecy. Once the dam flooded out the local population and tribes, what ultimate local needs would be left to consider?

Photo by Catherine Sandoval,

The Klamath River on the Yurok Reservation

# Drivers of the Native American Reservation Electricity and Infrastructure Gap

- The U.S. Bureau of Reclamation's January 1951 INTERIM REPORT ON RECONNAISSANCE detailed a plan to dam the Klamath River and flood the Hoopa Valley Reservation where the Yurok, Hoopa, Karuk, and other tribes lived.
- The Bureau of Reclamation engineered the "Ah Pah Dam" to divert Klamath River water to cities and farms in central and southern California through a 222 mile tunnel connecting to the federal government's California Water Project.
- At 813 feet tall, nearly the height of San Francisco's Transamerica Pyramid, the Ah Pah dam would have been California's largest dam.



# Drivers of the Native American Reservation Electricity and Infrastructure Gap

- **Funnel Tribal Resources to Others**
- The INTERIM REPORT ON RECONNAISSANCE omits mention of the Yurok, Hoopa, Karuk and other tribes that would be flooded by the Ah Pah dam, rendering the tribes invisible.
- The report does not use the words “tribe,” “Indian,” or “Native American,” nor does it discuss tribal water rights, tribal sovereignty, or tribal safety.
- Nor does it mention that the Hoopa Valley Reservation was the dam site and proposed inundation zone.
- *Bureaucratic erasure* facilitated the Bureau’s proposed appropriation of tribal lands without consideration of rights of or risks to tribal members and the tribes.



## Water is Life



“Now the people will have enough to live on. Everything that is needed is in water.” Yurok Creation Story, How Thunder and Earthquake Made Ocean.

The U.S. Supreme Court observed in 1905 that water and fish “were not much less necessary to the existence of the Indians than the atmosphere they breathed.”

United States v. Winans, 198 U.S. 371, 381 (1905)

# Drivers of the Native American Reservation Electricity and Infrastructure Gap

- **Funnel Tribal Resources to Others**
- The Ah Pah dam was never built due largely to opposition from Los Angeles.
- The report contemplated that Ah Pah dam water would replace 1.2 million acre feet of Colorado River water. Los Angeles and other southern California cities and water users feared that Ah Pah dam construction would be used to pressure them to give up Colorado River water rights. MARK REISNER, *CADILLAC DESERT, THE AMERICAN WEST AND ITS DISAPPEARING WATER* 280 (1987).
- Aspirations to appropriate tribal water resources may have deterred investment in electric distribution and transmission resources in areas the government perceived as ripe to be dammed.

# Federal Recognition of Tribes

- Following the publication of the Reconnaissance Report proposing to flood the Hoopa Valley Reservation to create the Ah Pah dam, the Hoopa Tribe organized in 1952 in accordance with the Indian Reorganization Act and obtained federal recognition
- The Hoopa-Yurok Settlement Act of 1988 split the Hoopa Valley Reservation into separate Yurok and Hoopa Reservations.
- That Act also recognized the Yurok Tribe's authority to organize in a form that would lead to formal federal recognition in 1993 after the Tribe's adoption of the Yurok Constitution

# Leadership is key to closing the Native American Reservation Electricity Gap

- ***Tribal Leadership***: Many tribes have wanted infrastructure for more than a century. Tribes have acted as leaders to seek and develop infrastructure.
- The Yurok Tribe decided that it needed electricity, telephone service, the Internet, water treatment and wastewater service to thrive in the 20<sup>th</sup> and 21<sup>st</sup> Century and for millennia
- Since the Yurok Tribe's federal recognition in 1993, the Yurok Tribe drove the building of electric telecom, and water infrastructure on the reservation



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# Yurok Energy Perspective

## 20 years of Progress

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\*The Yurok Tribe led the 20-year development of the electric line to serve the Jack Norton Elementary School, the tribal members living in the Wautec community area of the Reservation, and the Yurok's water system.

\*Electricity was energized in this portion of the Yurok Reservation on August 31, 2018.

\*Electric reliability has been a problem with many outages lasting one week or more. The area lacks telephone service and a collector network for smart meters. Repair response has been slow.

\*The line extended electric service energized to portions of the Yurok Reservation in June 2013

\*A 1993 CPUC case settlement with PG&E provided matching funds and planning \$ for grants. Funds were exhausted after 25 years.

- CPUC Rural Infrastructure grant program expired.
- Federal Rural Utility Service (RUS) funds limited

The Wautec community, upriver on the Yurok Reservation

Tribal facilities on the right, households on the left.



Upriver communities on the Yurok Reservation home to ~180 households prior to the August 31, 2018 electric line extension::

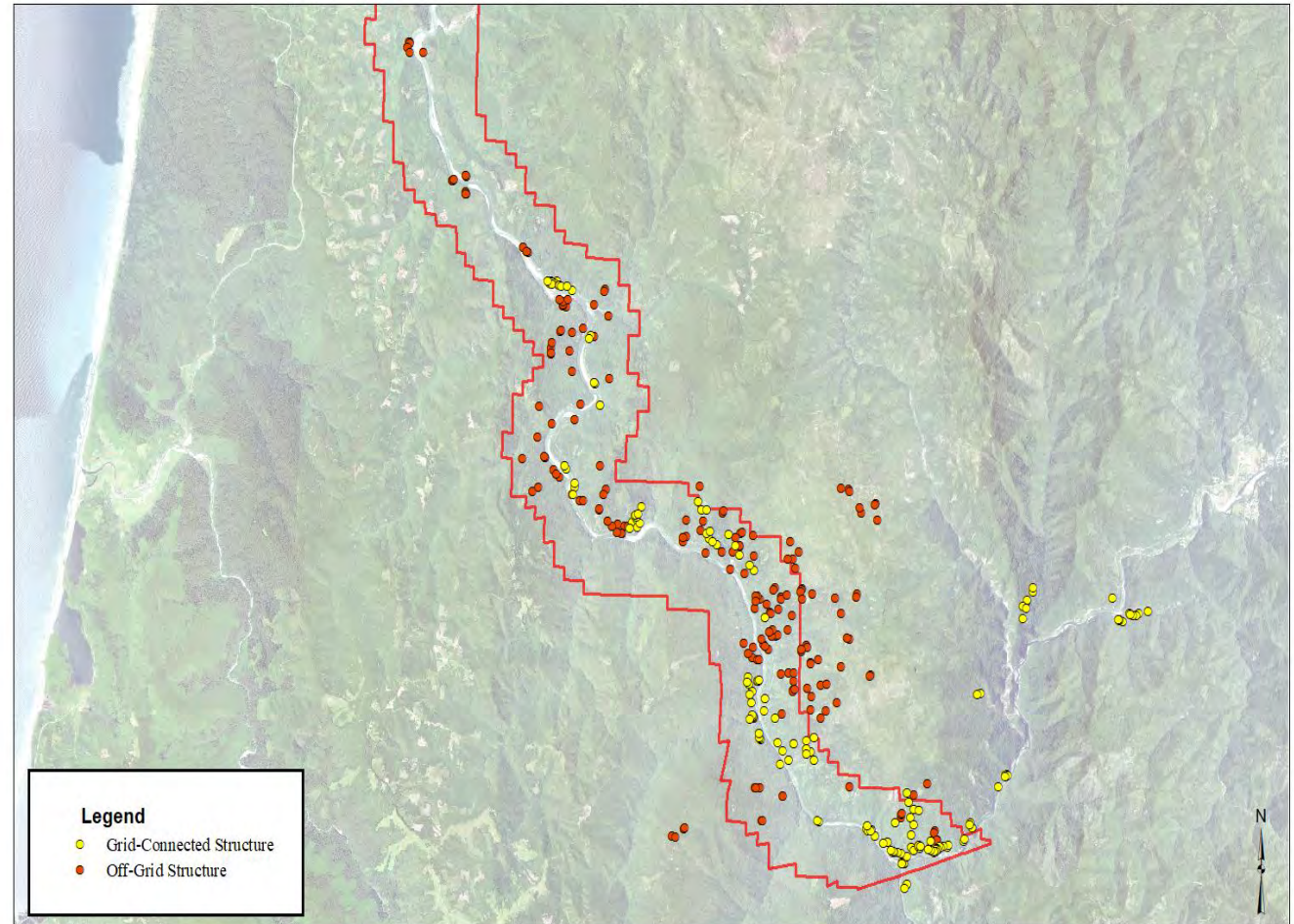
- \*Many households had no electric access and depended primarily on diesel or wood

- \*When power goes out (sometimes for a week) the tribe organizes an emergency response to provide wood for elders to prevent freezing and health emergencies.

# Yurok Reservation Energy Challenges

- Over 40% of upriver Reservation residents (Humboldt Co.) still do not have access to grid energy.
- Off grid residents pay a disproportionate share of their annual income for gas generators, propane appliances, wood stoves, propane, kerosene and wood fuel

## "Upper" Yurok Reservation Electrical Overview



Although information from land surveys has been used in the creation of this map, in no way does it represent or constitute a land survey. This map is for information and reference purposes only. The Yurok Tribe assumes no liability or responsibility in the use or misuse of this map and the information within.

0 1.25 2.5 5 Miles

Yurok Planning Department-  
8/13/2019





Photos by  
Catherine Sandoval  
Top Photo, End of  
the Electric Line,  
2016  
Bottom Photo:  
Diesel Generator at  
the Jack Norton  
Elementary School,  
2017

## The Electricity Gap Persists on the Yurok and many other Native American Reservations

\*Many Households on the Yurok, Hoopa, and other reservations are too far from the new electric line to fall without the CPUC's construction allowance remain dependent primarily on diesel generators or wood.

\*Diesel generator cost for a 15kW generator (@ 1 gallon per hour @ \$3.00 per gallon or ~\$11,000 per year for 10 hour per day operation).

\*2019 Diesel fuel costs \$3.7 to \$4.1 per gallon

\*Some households use wood for heat or cooking.

\*Median income \$20,000 per year.



## Solar even when coupled with storage provides limited power in the forest

Solar production is limited solar in the dense Yurok forest, shaded by mountains. Due to fog and smoke from nearby fires, solar production is often limited to one hour a day, 3 hours on a great sunny day.



The Yurok Tribe was one of a dozen tribes which received funding from the Tribal Solar Accelerator Fund (TSAF), a tribal-led initiative with seed funding from Wells Fargo that aims to catalyze the growth of solar energy and expand solar job opportunities in tribal communities across the United States.

Solar will be installed at the Yurok Tribe's Tulley Creek Facilities to complement grid electric access at that tribal building

Photos by Catherine Sandoval:  
Top Photo: Yurok Tribal Headquarters  
in Weitchpec, CA  
Bottom photo: Grid Alternatives

\*\*Households who are not electric utility customers are ineligible for the CPUC's energy savings assistance program (ESAP), <https://www.cpuc.ca.gov/esap/>, or energy efficiency programs or California Alternative Rates for Energy bill subsidies.

ESAP services provided include attic insulation, energy efficient refrigerators, energy efficient furnaces, weatherstripping, caulking, low-flow showerheads, water heater blankets, and door and building envelope repairs which reduce air infiltration.

Implementation of CPUC-authorized energy efficiency assistance through the ESAP program has been slow.

*\*Lack of energy access poses high economic, health, and environmental burdens*

Photo provided by Peggy O'Neill,  
former Yurok Tribe Planning  
Department Director, Yurok  
Reservation Household



# Yurok Reservation Infrastructure

## Challenges: Economic

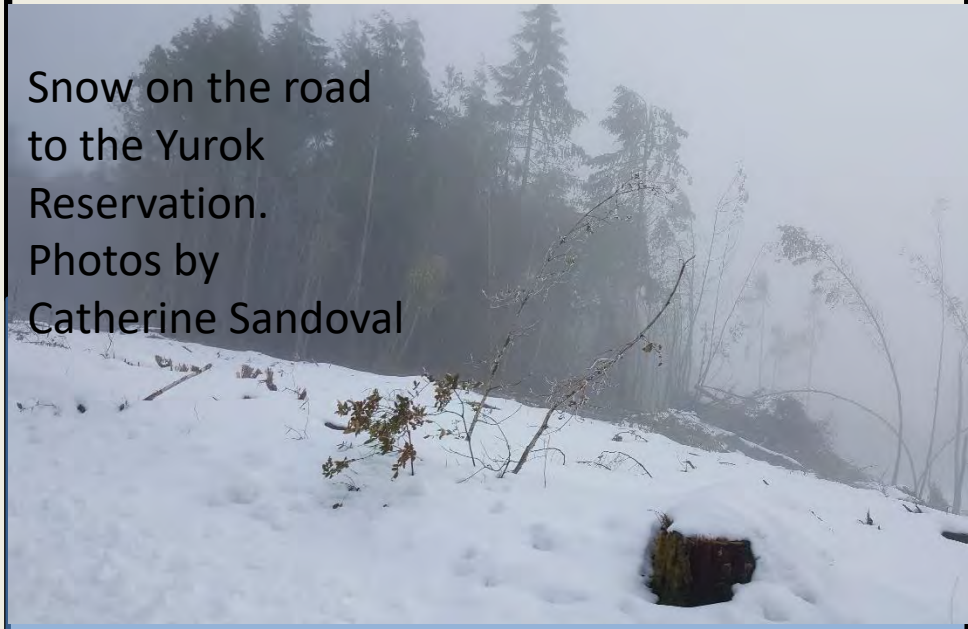


- Large percentage of reservation residents live below the poverty line
- Competing needs for limited tribal discretionary funds
- DOE often requires a high grant matching cost (50%)
- CPUC no longer offers grant funds for land line phone services (shared pole costs)
- Lack of tribal funding for a full-time Energy Planner

Telecom Facilities built on the Yurok Reservation with California Rural Infrastructure Grant funding. Program Expired.



Snow on the road to the Yurok Reservation. Photos by Catherine Sandoval





Jack Norton Elementary School on the Yurok Reservation lacked electricity access until August 31, 2018. Telephone service is still provided through the Yurok Tribe's links

Jack Norton Elementary School run by the Klamath/Trinity School District was powered since 1959 by diesel generators that consumed about 6,000 gallons of diesel per year, costing approximately \$18,000, and emitting pollutants that harm health and drive climate change



Photos by Catherine Sandoval, Jack Norton Elementary School and students, 2018





Jack Norton  
Elementary School on  
the Yurok Reservation,  
lacked grid electricity  
access until August 31,  
2018.

Diesel generators at Jack  
Norton Elementary School  
ran at an 84 decibel sound  
level, as measured in  
September 2014.

In January 2017 the diesel  
generators in a tent next to  
the cafeteria ran at 90  
Decibels, machine shop  
Levels.



This California-run  
public elementary  
school used diesel  
generators for decades,  
emitting small  
particulates, PM 2.5  
that contribute to ill-  
health and climate  
change

## ***Participate Matter, PM 2.5, Health and Climate Change***

\*Small particles from diesel, wood, and other combustion can easily penetrate deep into the lungs

\*Short- and long-term exposures to PM 2.5 have been shown to lead to harmful health effects.

\*Higher rates of hospitalizations, emergency and doctor's visits for respiratory illnesses, heart disease, asthma symptoms, acute and chronic bronchitis are associated with times of high PM concentrations.

\*PM 2.5 contributes to snow melt & climate change

Photo from Ozy, Story by Rishika Pardikar, This is Warming the Planet Faster than Carbon Dioxide, Aug. 6, 2019

<https://www.ozy.com/acumen/this-is-warming-the-planet-even-faster-than-carbon-dioxide/95450>



# *Climate Change on the Yurok Reservation*

“For us, climate change is no longer discussed as something that will happen in the future, it is happening now. Many of the predicted effects of climate change including floods, droughts, extreme fire behavior, and increased stress to aquatic life, are already happening,” according to Chairman James’ oral testimony before Congress in March 2019.

The Yurok Tribe is combatting climate change through regional water quality improvement projects, fisheries restoration and forest revitalization including restoring old-growth forest systems in the Lower Klamath watershed, which also benefits of salmon and native wildlife.

\*Energy access which reduces or eliminates use of black carbon fuels such as diesel, kerosene, and wood burning, and reduce use of other fossil fuels such as gasoline will mitigate climate change impacts and protect the people, forest, river, and planet



Photo and quotes from story by Redheaded Blackbelt, Yurok Tribal Chairman Joe James Testifying this Afternoon about Climate Change Impacts, March 6, 2019

<https://kymkemp.com/2019/03/06/yurok-chairman-testifying-now-to-congress-about-climate-change-impacts/>

For info on the Yurok Tribe’s Climate Change Strategy see:

[http://www.yuroktribe.org/documents/2016\\_march\\_newsletter.pdf](http://www.yuroktribe.org/documents/2016_march_newsletter.pdf)

\*Electricity and Communications are Interconnected Infrastructures.



\*Photos: Then CPUC Commissioner Sandoval and Paul Romeo, then the Yurok Tribe's Information Technology Director, celebrating with the Tyners their first phone service, Yurok Reservation, April 2014



# **Federalism, Coupled with the Absence of Federal Policies to Provide Infrastructure Access on Native American Reservations, Drive Infrastructure Gaps**

- The states are in charge of electric distribution lines
- States shifted in the 1980 to 1990s from policies to promote universal service to focus on cost recovery
- Many tribal members cannot afford the \$40,000 per mile minimum typically charged in California under CPUC Rule 15 for electric line extensions or under CPUC Rule 16 for electric service drop extensions that exceed the Rule 15 or 16 allowances.
- Policies did not adequately consider unserved areas

# ***Safe, Reliable Service at Just and Reasonable Rates***

\*The Yurok Tribe seeks what other Californians have, safe, reliable service at just and reasonable rates with adequate facilities per California Public Utilities Code 451

\*Grid-based energy strategy harnesses California's renewable energy policies

\*Becoming a California utility customer makes accessible California's energy support, efficiency, and renewable programs

\*The Yurok tribe is investigating microgrid, Electric vehicle to home including electric boat to home power strategies.





- *Energy Access Needs Remain on the Yurok Reservation*
  - Some Yurok reservation residents including elementary and secondary school students, teachers, and others remain without access to grid-based electric power and primarily reliant on diesel generators
  - The Yurok Tribe needs funding for matching grants for the grid extension, microgrid projects, and other energy needs
  - Government and philanthropic grants can help meet energy needs that improve health, educational, economic, civic, and self-determination opportunities.
- \* Yurok 501(3)(c) will seek support to raise matching funds to enable grant applications



## ***Energy Access is Energy Justice, The Yurok Tribe's Trailblazing Work to Close the Native American Reservation Electricity Gap, Proposals:***

\*The CPUC should open a proceeding to evaluate the electric line extension and service rules for underserved areas such as Native American Reservations.

\*California should adopt a bill to support cost of electric extension on reservations to reduce environmental burdens from diesel and wood use, enable economic opportunities, improve health, education, civic and cultural engagement

\*The federal government should prioritize and fund infrastructure to Native American Reservations, in consultation with and with consent of Tribes

\*Need public, academic, and government support for tribal infrastructure

\*Need private sector work on energy efficiency, innovation for energy service





- ***Documenting and Closing the Native American Reservation Electricity Gap:***

- Need academic studies done with tribal consultation to document the Native American Reservation Electricity and Infrastructure Gap issue, identify causes, and recommend solutions.
- ***Professor Sandoval's book chapter, Energy Access is Energy Justice*** identifies other gaps such as on the Hoopa Valley Reservation where tribal members may be allotted plots to build residences too far from electric lines to fall within the CPUC's construction allowance.
- The approx. \$40,000 a mile cost to extend electricity is cost-prohibitive for many tribal members, leading to primary reliance on diesel, wood, and other sources that produce short-lived climate pollutants, as solar does not produce enough power to meet basic needs

# Tribal Consultation is Key

- Consultation and coordination with tribal governments is the foundation for partnerships to address the Electricity Gap and Infrastructure Gap on Native American Reservations
- Photo: Yurok Tribal Chairman and Council Members meet with CPUC Low-Income Oversight Board Members and CPUC Commissioner Sandoval in 2016 to discuss study of and action to address Yurok Reservation Infrastructure Gaps



# Energy Access is Energy Justice; The Yurok Tribe's Trailblazing Work to Close the Native American Reservation Electricity Gap, by Catherine J.K. Sandoval

- This book chapter is featured in the book:
- ENERGY JUSTICE, U.S. AND INTERNATIONAL PERSPECTIVES, Published November 2018
- Encourage your library to order it:
- <https://www.e-elgar.com/shop/energy-justice>
- <https://www.amazon.com/Energy-Justice-International-Perspectives-Environmental/dp/1786431750>
- Thanks to the Yurok Tribe for their collaboration and research information for the book chapter



# Thank you!



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For more information about the Yurok Tribe please see

[www.Yuroktribe.org](http://www.Yuroktribe.org)