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

***Book Chapter published in:
Energy Justice, International and U.S. Perspectives,
Raya Salter, Carmen G. Gonzalez, Michael H. Dworkin, Roxanna A. Mastor,
Elizabeth Kronk Warner, Eds. (Edward Elgar, Pub. 2018)***

Book available at:

<https://www.e-elgar.com/shop/energy-justice>

***[https://www.amazon.com/Energy-Justice-International-Perspectives-
Environmental/dp/1786431750](https://www.amazon.com/Energy-Justice-International-Perspectives-Environmental/dp/1786431750)***



***Diesel generator at the Jack Norton Elementary School,
Yurok Reservation, January 2017.
Grid Electricity Energized August 2018***

***Catherine J.K. Sandoval,
Energy Access is Energy Justice:
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Native American Reservation Electricity Gap***

“Swaths of homes don’t have electricity, phone service, or Internet connectivity.”

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Javier Kinney, Esq., Director of the Office of Self-Governance for the Yurok Tribe, describing the Yurok Reservation in Weitchpec, California, 2013¹

Energy access is a predicate to energy justice. In the continental United States, Native Americans² living on “Indian” 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.³ 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.⁴

Through a case study of the Yurok Tribe’s path-breaking work to extend the electric grid to the Yurok Reservation in northern California, this chapter examines the roots of the Native American reservation electricity gap. It argues that federal policies to fracture tribes, fragment tribal landholding, and funnel tribal resources to others foster the electricity gap on Native American reservations. It examines federal and state policies that erect barriers to electricity access and contribute to tribal poverty by forcing tribes that lack electric grid access to rely on diesel generators, or a mix of renewables and diesel. It suggests federal and state policy reforms

¹ Diedre Pike, *Road Warrior, For Javier Kinney JD '04, Self-Governance Director for California's Largest Indian Tribe, The Path to Sovereignty Is Paved With Asphalt*, SUFFOLK U. MAG. (Spring Summer 2013), <http://www.suffolk.edu/magazine/114.php#.WbXjSNG2xPY>.

² I use the term “Native American” rather than “Indian” to refer to the indigenous people who have lived for millennia in the land that is now the United States of America. The U.S. Supreme Court refers to “Indian law” when construing acts regarding the federal trust relationship with Native American tribes. *See, e.g., Affiliated Ute Citizens of Utah v. United States*, 406 U.S. 128, 142 (1972). The term Indian, derives from Christopher Columbus’ belief that he was creating a route for trade between Europe and India. *People v. Hall*, 4 Cal. 399, 400 (1854). I use the term “Indian” as appropriate to the source or the body of law.

³ ENERGY INFORMATION ADMINISTRATION, ENERGY CONSUMPTION AND RENEWABLE ENERGY DEVELOPMENT POTENTIAL ON INDIAN LANDS, 3 fig. 1 (April 2000), <https://www.energy.gov/sites/prod/files/2017/06/f34/EIA2000.pdf>.

⁴ Tracy Stanhoff, President & Creative Director, AD PRO, Former Tribal Chair, Prairie Band Potawatomi Nation, President, American Indian Chamber of Commerce of CA, Native American Chamber of Commerce of California Expo, Address at the Native American Infrastructure Summit (July 24, 2017). *See also, Living Conditions, NATIVE AMERICAN AID*, http://www.nativepartnership.org/site/PageServer?pagename=naa_livingconditions (last visited Feb. 12, 2018) (“While most Americans take running water, telephones, and electricity for granted, many reservation families live without these amenities. . . .Overcrowding [in housing], substandard dwellings, and lack of utilities all increase the potential for health risk, especially in rural and remote areas where there is a lack of accessible healthcare.”).

to close electricity access gaps to diminish poverty, increase tribal welfare, strengthen democracy, and improve the environment.

Section I provides an overview of electricity gaps within Native American reservations. Section II analyzes the relevant history of the Yurok Reservation's formation, highlighting federal and state policies that contribute to the lack of electric and communications infrastructure that fuels poverty on the Yurok Reservation. Section III analyzes the federal proposal to create the Ah Pah dam which would have flooded what was then the Hoopa Valley Reservation where the Yurok, Hoopa, Karuk, and other tribes lived in order to divert tribal water resources to other communities. Federal resource appropriation policies reinforced the electricity gaps on the Yurok and Hoopa Reservations. Section IV examines the 1991 decision of the California Public Utilities Commission (CPUC) in *Smith River Power Plant Associates v. PG&E*.⁵ That state decision allowed PG&E and a renewable energy generator to build a transmission line route that largely circumvented the Yurok Reservation's borders, in lieu of building a line that could have served as a backbone for Yurok Reservation electric service. Section V examines the impact of federalism on the Native American electricity gap. States are responsible for electric distribution and intrastate transmission regulation, and since 1935 when Congress passed the Federal Power Act,⁶ the federal government is responsible for interstate transmission and wholesale energy market regulation. The federal government has not, however, assumed responsibility for funding electric distribution access to Native American tribes, and only occasionally provides some competitive grants and loans. This chapter argues that the federal government's fiduciary trust obligations for sustainable yield timber management and congressional statutes that adopted goals of providing high-quality education and health outcomes for Native Americans require federal support for safe, reliable, and sustainable energy access on Native American reservations. Section VI explores the Yurok Tribe's more than thirty years of work to build the electric grid to serve Reservation needs. It argues that states such as California should align electric line extension and service rules with greenhouse gas (GHG) and black carbon reduction policies to promote tribal electric grid initiatives and achieve state energy, environmental, education, health,

⁵ CPUC, Decision 91-02-044, Case 89-10-035, *Smith River Power Plant Associates vs. PG&E*, 39 CPUC 2d 374 (1991) [hereinafter *Smith River Power v. PG&E*].

⁶ Federal Power Act (FPA), § 213, 49 Stat. 847, (codified as amended at 16 U.S.C. § 824 *et seq.* (2012)).

and other goals. Section VII offers recommendations to foster electric grid expansion to Native American reservations.

This chapter argues it is long past time to build safe, reliable, and sustainable electricity facilities including the electric grid on Native American reservations. Such energy access initiatives will assist tribes and tribal members, increase economic, civic, and democratic opportunities, reduce black carbon emissions, forestall climate change, and foster energy justice.

I. The Problem: Electricity Access Gaps in Indian country, specifically the Yurok Reservation

In 2018 the electric grid does not reach hundreds of homes and the Jack Norton Elementary School run by the State of California on the Yurok Reservation. The federal government recognized the Yurok Reservation in 1988 through the Hoopa-Yurok Settlement Act which created separate reservations for the Hoopa and Yurok Tribes.⁷ More than one hundred and thirty years earlier, the federal government signed a "Treaty of Peace and Friendship" with the Yurok Tribe to "set apart as an Indian reservation" land "forever guaranteed to said tribes, [and] their successors," but Congress failed to ratify that treaty.⁸ In 1891, President Harrison designated the area along the Klamath River where the Yurok live as "the Addition" to the Hoopa Valley Reservation.⁹ "The Addition," west of the town of Weitchpec, California, is where most Yurok residents who lack electricity today are concentrated. Electric facilities were not built to serve the people living in "the Addition" until the Yurok Tribe led electric grid construction efforts in the thirty years following the federal government's 1988 recognition of the Yurok Reservation.

In 2005, 70% of the Yurok Reservation's residents lacked access to electricity or basic telephone services. In contrast, northern California towns such as Yreka, California near the Oregon border were connected to the electric grid in 1891 through state policies to promote

⁷ Hoopa-Yurok Settlement Act, 25 U.S.C. §§ 1300i–1300i–11, PL 100–580 (S 2723), PL 100–580, 102 Stat 2924 (1988) [hereinafter *Hoopa-Yurok Settlement Act*].

⁸ Lynn Huntsinger & Lucy Diekmann, *The Virtual Reservation: Land Distribution, Natural Resource Access, and Equity on the Yurok Forest*, 50 NAT. RESOURCES J. 341, 349 (2010).

⁹ *Short v. U. S. (Short I)*, 486 F.2d 561, 562 (Ct. Cl. 1973) (citing Executive Order of President Harrison, Executive Mansion, Oct. 16, 1891).

universal electric service and economic development such as logging operations.¹⁰ Universal service policies spread the cost of building utility infrastructure to all electric ratepayers. Approximately one hundred years later, California state policy shifted from promoting universal electric service to seeking cost recovery from the “cost-causer” of electric distribution expenditures. That shift reified electric infrastructure gaps.

Cost recovery policies adopted in California in 1994 left many individuals, families, institutions, and tribes unable to afford the \$40,000 a mile or more charged to build electric lines.¹¹ For example, on the Hoopa Valley Reservation in California, tribal members who come of age and apply for a home building site on the Reservation may be allotted a plot located too far from the nearest electric distribution line for CPUC rules to cover the costs of building an extension of electric lines (an electric line extension), or connecting a household to electric service through the construction of wires and facilities to nearby electric lines (an electric service drop). Many tribal members cannot afford the \$40,000 per mile 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.¹²

This situation is not unique to the Yurok Tribe. Other Native American reservations have significant populations lacking electric grid access. Census data indicates that 18,000 of the 48,000 households on the Navajo Nation lacked access to electricity in 2000.¹³ The average cost

¹⁰ DUSTIN JOLLEY & THE SCHATZ ENERGY RESOURCE CENTER, YUOK TRIBE, TRIBAL UTILITY FEASIBILITY STUDY, & HUMAN CAPACITY BUILDING IN ENERGY EFFICIENCY AND RENEWABLE ENERGY SYSTEM MAINTENANCE, 3 (Oct. 19, 2005), https://www.energy.gov/sites/prod/files/2016/01/f28/0510review_34jolley.pdf; 1 U.S. DEPT. OF THE INTERIOR & CALIFORNIA DEPT. OF FISH AND GAME, KLAMATH FACILITIES REMOVAL, FINAL ENVIRONMENTAL IMPACT STATEMENT, ENVIRONMENTAL IMPACT REPORT § 1.3.2 (Dec. 2012), https://klamathrestoration.gov/sites/klamathrestoration.gov/files/Additonal%20Files%201/4/Volume%20I_FEIS.pdf f. [hereinafter *Klamath Facilities Removal EIS/EIR*].

¹¹ See CPUC D. 94-12-026; CPUC D. 97-12-098; CPUC D.07-07-019 (July 12, 2007). See *supra* text accompanying notes 86–89.

¹² Interview with Patrick Jackson, Computer Specialist, Hoopa Tribe (Jan. 19, 2017) (on file with the author); PG&E, Electric Rule 15 (June 20, 2008), Sheet 1, A (1)(b), https://www.pge.com/tariffs/tm2/pdf/ELEC_RULES_15.pdf [hereinafter *PG&E, CPUC Rule 15*]; PG&E, Electric Rule 16 (May 19, 2003), https://www.pge.com/tariffs/tm2/pdf/ELEC_RULES_16.pdf [hereinafter *PG&E, CPUC Rule 16*].

¹³ David Tarasi, Christian Alexander, Julie Nania, Bob Gregory, Naree Chan & Doug Vilsack, *18,000 Americans Without Electricity: Illuminating and Solving the Navajo Energy Crisis*, 22 COLO. J. INT'L ENVTL. L. & POL'Y 263, 265 (2011).

to extend an electric line a mile on the Navajo Nation was estimated at \$27,000 in 2011, a cost driven by state utility line extension policies.¹⁴

The federal government has not made closing electricity access gaps on Native American reservations a policy priority, even though reservations are “federal enclaves” created by federal acts. The Rural Electrification Administration (REA) created in 1936 during the Great Depression skipped many Native American Reservations while extending the electric grid to millions of American rural homes and farms. REA’s enabling statute did not authorize Native American tribes to apply for REA loans and grants.¹⁵ The exclusion of Native American tribes from REA eligibility categories reveals the “master narrative” reflected in the ongoing absence of a federal or state policy to close the electricity gap on Native American reservations.¹⁶

The Rural Utility Service (RUS), an Agency of the U.S. Department of Agriculture since 1994, has provided some grants to help build electric and telephone facilities in areas where costs to build or provide energy are high.¹⁷ RUS regulations made Native American tribes and Alaska Native Corporations eligible for high energy cost grants, though that program’s purpose is not specifically aimed at increasing electric access on Native American reservations.¹⁸ President Trump’s 2018 budget proposes to slash this chronically underfunded RUS program.¹⁹ As federal and state budget debates reveal, infrastructure reflects political decisions.²⁰

Native Americans living on reservations that lack electricity face nineteenth century conditions, while reservation school children are expected to do homework that requires twenty-first century tools and skills. Students who attend the elementary school on the Yurok

¹⁴ *Id.*

¹⁵ Rural Electrification Act of 1936, Pub. L. No. 74-604, 49 Stat. 1363 (codified as amended at 7 U.S.C. § 901 (1936), as amended through P.L. 110–246, effective May 22, 2008 (making rural electrification loans available to “States, Territories, and subdivisions and agencies thereof, municipalities, peoples’ utility districts and cooperative, nonprofit, or limited-dividend associations organized under the laws of any State or Territory of the United States.”))

¹⁶ See Susan Leigh Star, *The Ethnography of Infrastructure*, in BOUNDARY OBJECTS AND BEYOND, WORKING WITH LEIGH STAR 89 (Geoffrey C. Bowker, et al. eds., 2015).

¹⁷ RURAL UTILITY SERVICE, U.S. DEPT. OF AGRICULTURE, <https://www.rd.usda.gov/about-rd/agencies/rural-utilities-service> (last visited Feb. 15, 2018) (providing loans, loan guarantees, and grants for rural electrification under Rural Electrification Act of 1936, as amended in 7 U.S.C. § 901, and 7 C.F.R. § 1709.101).

¹⁸ 7 C.F.R. § 1709.106 (2017).

¹⁹ OFFICE OF MGMT. & BUDGET, MAJOR SAVINGS AND REFORMS, BUDGET OF THE U.S. GOVERNMENT, FISCAL YEAR, 2018 (2018); Jose A. DelReal, *Heavy Cuts to Rural Development and Infrastructure in Latest Trump Budget*, THE WASHINGTON POST, May 23, 2017, https://www.washingtonpost.com/news/post-nation/wp/2017/05/23/heavy-cuts-to-rural-development-and-infrastructure-in-latest-trump-budget/?utm_term=.f938b49962dd.

²⁰ See Leigh Star, *supra* note 16, at 89.

Reservation are tested through State of California proficiency exams that require computers, electricity, and computer familiarity.²¹ Jack Norton Elementary School runs on a diesel generator, and school must close when the generator stops working. Many students lack electricity at their homes. Those children lack opportunities comparable to other students in the school district, the state, and the nation to develop skills needed in the twenty-first century economy. The absence of electricity deters construction of telephone and Internet facilities which depend on electric power to reach communities. Lacking electricity and communications facilities and services, Native American tribes are structurally locked out of opportunities made available to most other American communities by the mid-twentieth century.

Energy infrastructure poverty is community poverty stemming from federal, state, and private sector decisions that excluded many Native American reservations from “universal service” policies. Strategies focused on individual rights, or on alleviating individual or family poverty, are insufficient to provide the resources needed to build the electric grid to households and institutions that lack such access.

Due to the electric grid’s absence, in 2018, hundreds of Yurok Reservation residents and several institutions harness energy primarily from diesel generators, wood, propane, or kerosene. Those energy sources produce “black carbon” emissions and fine particulates including particulate matter 2.5 (PM 2.5) which induce climate change and ill-health. Black carbon ranks second only to carbon dioxide for its climate-warming effects.²² “Although black carbon remains in the atmosphere for only a few days, one gram of black carbon warms the atmosphere several hundred times more during its short lifetime than one gram of carbon dioxide does during 100

²¹ See *Student Device and Secure Browser Requirements*, SMARTER BALANCE ASSESSMENT CONSORTIUM, <http://www.smarterbalanced.org/assessments/testing-technology/devices-and-browsers/> (last visited Feb. 15, 2018) (describing the need for a computer with a keyboard including a pointing device which “may be a mouse, touch screen, touchpad, or other pointing device with which the student is familiar,” and “a minimum of 20Kbps bandwidth available per student to be tested concurrently.”) Bandwidth needs per student to be tested are accretive to any school administrative or other educational needs. See Laurie Udesky, *Many Schools Lack Internet Capacity for Tests*, EDSOURCE (Oct. 28, 2014), <https://edsources.org/2014/schools-lack-internet-capacity-for-tests/68797>.

²² T.C. Bond, S.J. Doherty, et. al., *Bounding the Role of Black Carbon in the Climate System: A Scientific Assessment*, 118 J. GEOPHYSICAL RES. 5380, 5388 (June 2013), <http://onlinelibrary.wiley.com/doi/10.1002/jgrd.50171/pdf>; IRENE GUTIERREZ, NATIONAL RESOURCES DEFENSE COUNCIL, COMMENTS ON CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY AND CALIFORNIA AIR RESOURCE BOARD’S REVISED PROPOSED SHORT-LIVED CLIMATE POLLUTANT REDUCTION STRATEGY (Nov. 2016) (Submitted Jan. 17, 2017), <https://www.arb.ca.gov/lists/com-attach/60-2016slcp-UT9cKAdiV2cFXAdk.pdf>.

years.”²³ Fine particulates including PM 2.5 can lodge in the lungs and result in cardiovascular and pulmonary disease.²⁴ Kerosene lamps emit “almost entirely BC [black carbon] and carbon dioxide (CO₂), both of which warm the climate.”²⁵ In contrast, “[e]lectric lighting improves lighting service, reduces fuel costs and improves health and safety while emitting no BC.”²⁶

Renewables have proven insufficient to meet energy needs in the Yurok Reservation’s forest location. The forest and mountains limit solar productivity, and wind resources are poor on the Yurok Reservation. Drought, upstream dams, and the Tribe’s commitment to protect river ecosystems limit micro-hydroelectric energy potential. Some micro-hydro systems create “spiky” power that occasionally exceeds the voltage range electronics such as computers are designed to accept. Micro-hydro systems cannot reliably support use of computers, the Internet, refrigerators, and microwaves common in many American households. On the Yurok and many other reservations, diesel generators provide primary, not “backup” power, for stand-alone renewable systems, resulting in costly, polluting, and unreliable energy.

Policies focused on reducing greenhouse gas emissions from the electric sector do not address energy infrastructure gaps, though the lack of electricity drives reliance on diesel generators as a primary power source. In 2017, California’s Air Resources Board (CARB) adopted a strategy to reduce short-lived climate pollutants (SLCP) such as diesel, wood, and kerosene black carbon emissions by 40 percent below 1990 emission levels by 2030.²⁷ Grid

²³ Arne Jacobsen, Tami C. Bond, Nicholas L. Lam & Nathan Hultman, *Black Carbon and Kerosene Lighting: An Opportunity for Rapid Action on Climate Change and Clean Energy for Development*, BROOKINGS INST., WASH., DC (U.S.). GLOBAL ECON. AND DEV. 3 (Apr. 15, 2013), <https://www.osti.gov/scitech/biblio/22110332>.

²⁴ WORLD HEALTH ORGANIZATION, HEALTH EFFECTS OF BLACK CARBON vii (2012), http://www.euro.who.int/__data/assets/pdf_file/0004/162535/e96541.pdf; Johanna Lepeule, et al., *Chronic Exposure to Fine Particles and Mortality: An Extended Follow-Up of the Harvard Six Cities Study From 1974 to 2009*, ENVTL. HEALTH PRSPS. (July 2012), <http://ehp.niehs.nih.gov/1104660/>; *Particle Pollution*, AM. LUNG ASS’N, <http://www.lung.org/our-initiatives/healthy-air/outdoor/air-pollution/particle-pollution.html> (last visited Feb. 15, 2018).

²⁵ Jacobsen, Bond, Lam & Hultman, *supra* note 23, at 3.

²⁶ *Id.* at 3, 5 (discussing adverse health outcomes associated with kerosene use in homes, including tuberculosis, low birth weight and still birth, citing N.L. Lam, K.R. Smith, A. Gauthier & M.N. Bates, *Kerosene: A Review of Household Uses and Their Hazards in Low- and Middle-Income Countries*, J. TOXICOLOGY & ENVTL HEALTH, PART B: CRITICAL REVS., 15(6), 396-432 (2012)).

²⁷ CARB, REDUCING SHORT-LIVED CLIMATE POLLUTANTS IN CALIFORNIA (Mar. 2017), https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf *citing* Senate Bill 605 (Lara, Ch. 523, Stat. 2014) (directing CARB to develop a comprehensive SLCP strategy); SB 1383 (Lara, Chap. 395, Stat. 2016) (directing CARB to approve and begin implementing the plan by January 1, 2018, and set statewide 2030

expansion and connection will supplant diesel generators, reduce wood burning, and displace kerosene lighting, cutting back carbon emitted by each of these sources and CO₂ produced by diesel and kerosene. It will enable the electrification of transportation in areas lacking grid access, improve health, and increase economic and civic opportunities. Electric grid access is part of the Yurok Tribe's strategy to mitigate and adapt to climate change. This grid-based strategy leverages California's initiatives to generate 100 percent of grid energy from renewable sources by 2045, 50 percent by 2030, and 33% by 2020.²⁸

The laws and policies that created utility infrastructure gaps on Native American reservations are rooted in the federal government's creation and administration of reservations, and in state policies that erected financial barriers to grid extension, as explored below. Understanding the roots of the electricity gap on the Yurok Reservation can help shape policies and strategies to close the Native American reservation electricity gap.

II. Thor's Hammer: Fracture Tribes, Fragment Landholding, and Funnel Tribal Resources to Others in the Face of Tribal Fortitude

The "Indian people will never surrender their desire to control their relationships both among themselves and with non-Indian governments, organizations, and persons."

Congressional Finding, Indian Self Determination and Education Assistance Act, 1974²⁹

Reservation creation was not a one-time event for the Yurok that began and ended in the late 19th century. The Yurok Reservation was established in 1988, more than one hundred and thirty years after the Gold Rush era began in 1849. Gold miners and settlers took tribal resources and in some cases kidnapped tribal children, forced adults into indentured servitude, and even killed tribal members.³⁰ In 1851 the Yurok signed with the federal government's "Indian Agent"

emission reduction targets for methane, HFCs, and anthropogenic black carbon) [hereinafter *CARB, Reducing SLCP*].

²⁸ The Cal. Global Warming Sols. Act of 2006, Stats. 2006 Ch. 488 § 1 (AB 32) (effective Jan. 1, 2007); Exec. Order S-14-08 (Nov. 17, 2008), available at <http://gov.ca.gov/executive-order/11072/>; SBX1-2, 2011 Leg., Ext. Sess. (Cal. 2011), available at http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0001-0050/sbx1_2_bill_20110412_chaptered.html (requiring 33% renewable generation by 2020); Clean Energy and Pollution Reduction Act of 2015, S.B. 350, 2015-16 Leg., Reg. Sess. (Cal. 2015) (requiring 50% renewable generation on the electric grid by 2030); S.B. 100, 2017-2019 Leg. Reg. Session, Ch. 312 (2018) requiring 100% renewable energy by 2045).

²⁹ S. Rep. No. 93-682, at 1 (1974), Pub. L. No. 93-638, as amended; 25 U.S.C. § 450b(e) (1998) [now 25 U.S.C. § 5304(e) (2012)].

³⁰ YUROK CONST., Pmb1., 2, <http://yuroktribe.org/government/councilsupport/documents/Constitution.pdf> (last visited Feb. 15, 2018) ("Our social and ecological balance, thousands and thousands of years old, was shattered by

the "Treaty of Peace and Friendship" which "set apart as an Indian reservation," land "forever guaranteed to said tribes, [and] their successors."³¹ California, newly admitted to the Union in 1850, lobbied against treaty ratification through an effort led by State Assembly members who sought land for miners and settlers.³² Congress failed to ratify the treaty or "to notify the tribes of this decision."³³

After Congress failed to ratify the 1851 Treaty, the federal government in 1855 established the Klamath River Indian Reservation and ordered several tribes including the Yurok, Hoopa, and Karuk to live there.³⁴ That reservation occupied one mile on each side of the Klamath River for 20 miles from the ocean, and measured seven percent of the Yurok's ancestral territory.³⁵ The Yurok Reservation established in 1988 follows the Klamath River for 44 miles for one mile on either side of the river, and incorporates the area of the prior Klamath River Indian Reservation. The Klamath River Indian Reservation was not established for any particular tribe but for "Indians."³⁶

Nine years after founding the Klamath River Indian Reservation, Congress sought to terminate the Reservation through the Act of April 8, 1864, by authorizing the sale of land held in trust for tribes.³⁷ The U.S. Supreme Court determined in *Mattz v. Arnett* nearly a century later in 1973 that "[n]o steps were taken to sell the reservation, or parts thereof, under the 1864 Act" so that Act did not terminate the Klamath River Indian Reservation.³⁸ This conclusion was pivotal to the Supreme Court's 1973 determination "that the land within the boundaries of the [Klamath River Indian] reservation is still Indian country within the meaning of 18 U.S.C. §

the invasion of the non-Indians. We lost three-fourths or more of our people through unprovoked massacres by vigilantes and the intrusion of fatal European diseases."); E-mail from Peggy O'Neill, Director, Yurok Tribe Planning Department to author (Oct. 2, 2017) (on file with the author) [hereinafter *O'Neill Oct. 2, 2017 email*].

³¹ Huntsinger & Diekmann, *supra* note 8, at 349.

³² *Id.* (citing Report of the California Assembly Committee to Inquire into the Treaties Made by the United States Indian Commissioners with the Indians of California in TREATY MAKING AND TREATY REJECTION BY THE FEDERAL GOVERNMENT IN CALIFORNIA, 1850-1852, at 45-49 (George E. Anderson, W.H. Ellison & Robert F. Heizer eds., 1978)).

³³ *Culture, Exploration and Settlement*, THE YUROK TRIBE, <http://www.yuroktribe.org/culture/culture2.htm> (last visited Feb. 15, 2018).

³⁴ *Klamath Facilities Removal EIS/EIR*, *supra* note 10, Sec. 3.12.

³⁵ YUROK CONST., *supra* note 30, Preamble, 2.

³⁶ *Id.*

³⁷ Act of April 8, 1864, 13 Stat. 39.

³⁸ *Mattz v. Arnett*, 412 U.S. 481, 490 (1973).

1151.”³⁹ The historical uncertainty about the legal status of the Klamath River Indian Reservation contributed to the lack of infrastructure development in what is now the Yurok Reservation.

In 1864, the federal government’s “Indian agent” proclaimed the establishment of the Hoopa Valley Reservation.⁴⁰ President Grant’s 1876 Executive Order recognized the Hoopa Valley Reservation more than a decade later.⁴¹ 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. In 1891, President Harrison extended the Hoopa Valley Reservation to include “the Addition” where most Yurok lived along the Klamath River.⁴² “Neither the public notices of 1864 and 1865 nor the executive order of 1876 mentioned any Indian tribe by name, nor intimated which tribes were occupying or were to occupy the reservation;” Hoopa, Yurok, some Karuk, and members of other tribes including the Redwoods lived on that reservation.⁴³

The Klamath River Reservation became part of the Addition to the Hoopa Valley Reservation through President Harrison’s 1891 Executive Order.⁴⁴ The *Jessie Short* case, filed in 1963 by several Yurok, Karuk, and other tribal members, determined after decades of litigation that all Native Americans who lived in the Hoopa Valley Reservation including the Addition were “Indians of the Reservation,” beneficiaries of federal trust responsibility for timber management on the Hoopa Valley Reservation.⁴⁵

Prior to the extension of the Hoopa Valley Reservation through President Harrison’s 1891 proclamation of the Addition, Congress adopted the General Allotment Act of 1887, also known as the “Dawes Act,” which sought to break up reservations by encouraging the transfer of land designated for “Indian Reservations” to individuals.⁴⁶ Wielded like Thor’s hammer at the

³⁹ *Id.* at 481, 483–84.

⁴⁰ *Karuk Tribe of California v. Ammon*, 209 F.3d 1366, 1372 (Fed. Cir. 2000).

⁴¹ *Short I*, 486 F.2d 561, 563–64.

⁴² *Id.* at 562.

⁴³ *Id.* at 563.

⁴⁴ *Id.* at 565–66.

⁴⁵ *Id.* at 568.

⁴⁶ Pub. Law No. 49-119, 24 Stat. 388 (1887) (codified as amended at 25 U.S.C. § 331 (1988)) [hereinafter *Dawes General Allotment Act*].

heart of reservations, the Dawes Act authorized the President to allot reservation lands in fee ownership to resident Indians and, “with tribal consent, to sell surplus lands.”⁴⁷ When all tribal land was allotted, the federal trust relationship expired and “the reservation could be abolished.”⁴⁸

The U.S. Court of Appeals for the Tenth Circuit characterized the Dawes Act’s objectives as “simple and clear cut: to extinguish tribal sovereignty, erase reservation boundaries, and force the assimilation of Indians into the society at large.”⁴⁹ These policies sought to fracture tribal identity and land ownership, end federal responsibility to tribes, and funnel tribal resources to others.

Many Yurok took their allotments out of trust status and sold them to loggers or logging companies, sales prompted in many cases by the need to pay taxes on land held out of tribal trust.⁵⁰ As a result, the “Yurok have been left with a highly fragmented landscape, one in which a few parcels of trust land are scattered throughout a matrix of privately held land.”⁵¹ This created a checkerboard of land held in trust for the Tribe, land held in fee or as an allotment, and privately held land. The U.S. Department of Energy (DOE) reported “[m]ore than 70% of the [Yurok] reservation lands are held by nontribal owners. Tribal plots are typically small, ranging from 20 to 200 acres each.”⁵²

In 1892, Congress made the Klamath River Indian Reservation “subject to settlement, entry, and purchase under the laws of the United States granting homestead rights and authorizing the sale of mineral, stone, and timber lands.”⁵³ Those sales transferred “Indian Reservation” land held in trust to “non-Indian settler-purchasers” and some Native Americans.⁵⁴ The resulting checkerboard land ownership pattern reverberates today in the Yurok Electricity

⁴⁷ *Mattz v. Arnett*, 412 U.S. 481, 496; *Dawes General Allotment Act*, *supra* n. 46, ch. 119, § 5, 24 Stat. 388.

⁴⁸ *Mattz v. Arnett*, 412 U.S. 481, 496.

⁴⁹ *Cty. of Yakima v. Confederated Tribes & Bands of Yakima Indian Nation*, 502 U.S. 251, 254 (1992).

⁵⁰ MARK BAKER & JONATHAN KUSEL, HOOPA VALLEY INDIAN RESERVATION, HUMBOLDT, CALIFORNIA, NORTHWEST ECON. ADJUSTMENT INITIATIVE ASSESSMENT 5 (citing LYNN HUNTSINGER, A YUROK FOREST HISTORY, U. OF CAL., BERKELEY: DEP’T OF ENVTL. SCI., POLICY, & MGMT. 88 (1994)).

⁵¹ *Huntsinger & Diekmann*, *supra* note 8, at 364.

⁵² U.S. DEPT. OF ENERGY (DOE), YUROK TRIBE, 2007 PROJECT, OFFICE OF INDIAN ENERGY POLICY AND PROGRAMS (2007).

⁵³ *Mattz*, 412 U.S. at 494–95 (citing the Act of June 17, 1892, 27 Stat. 52).

⁵⁴ *Blake v. Arnett*, 663 F.2d 906, 911 (9th Cir. 1981).

construction project. The Yurok Tribe must seek permission from individual landholders to build electric infrastructure in what was once the Klamath River Indian Reservation or part of the Hoopa Valley Reservation.

Congress retained rights-of-way and condemnation authority through “any lands granted to an Indian, or a tribe of Indians” for “railroads or other highways, or telegraph lines for public use” under the Indian Allotment Act of 1887.⁵⁵ Native American tribes received no condemnation authority over land held in federal trust for a tribe or reservation. The grant of an easement or right-of-way on tribal trust land (including a utility easement) requires the Interior Secretary’s approval under 25 U.S.C. § 319 as well as “the consent of the proper tribal officials.”⁵⁶

Under 25 U.S.C. § 357, lands held in fee, also known as lands “allotted in severalty to Indians may be condemned for any public purpose under the laws of the State or Territory where located in the same manner as land owned in fee may be condemned.”⁵⁷ In *United States v. Clarke*, the Supreme Court determined that the plain meaning of the term “condemnation” in § 357 was “a judicial proceeding instituted for the purpose of acquiring title to private property and paying just compensation for it, and not an action against a state or local government for inverse condemnation.”⁵⁸ Some utilities have used § 357 to build energy infrastructure on portions of a reservation checkerboard held individually.⁵⁹

Peggy O’Neill, Director of the Yurok Planning Department, has been leading the Yurok Electricity Project for the past seventeen years. O’Neill reported that obtaining right-of-way agreements for electric lines in this land ownership patchwork has delayed electric construction by years.⁶⁰ The Yurok Tribe was in dialogue for six years with a Hoopa Tribe member who owns land in fee in the Yurok reservation to obtain a right-of-way necessary to provide electricity to

⁵⁵ 24 Stat. 388, § 10.

⁵⁶ Marian C. LaLonde, *Federal Management of Tribal Lands and Resources, Energy and Mineral Development in Indian Country*, 2014 NO. 5 RMMLF-INST PAPER NO. 3, 3-11 (2014).

⁵⁷ Act of March 3, 1901 § 3, 331 Stat. 1084 (codified as amended at 25 U.S.C. § 357).

⁵⁸ *Pub. Serv. Co. of N.M. v. Approximately 15.49 Acres of Land in McKinley Cty.*, 155 F.Supp.3d 1151, 1161–62 (D.N.M. 2015) (citing *United States v. Clarke*, 445 U.S. 253, 258 (1980)) (quotations omitted).

⁵⁹ *Id.* at 1109 (citing *S. Cal. Edison Co. v. Rice*, 685 F.2d 354, 356 (9th Cir. 1982) (noting that § 357 treats individual Indian allottees like any other private landowners for condemnation purposes)).

⁶⁰ E-mail from Peggy O’Neill, Director, Yurok Planning Department, to author (Aug. 12, 2017) (on file with the author) [hereinafter *O’Neill Aug. 12, 2017 email*].

the reservation's elementary school.⁶¹ After six years, she finally gave her consent.⁶² O'Neill lamented that the Tribe's lack of condemnation rights over land held in fee delayed the delivery of electricity and timely performance on the RUS grant.⁶³

In addition to challenges created by land ownership fragmentation, the Yurok Electricity Project still faces constraints resulting from earlier federal efforts to funnel tribal resources to others. In 1951 the federal Bureau of Reclamation proposed to create a hydroelectric dam that would have flooded the Hoopa Valley Reservation to divert water to cities and farms. That plan cited the lack of "improvements" as a reason to build a dam on the Klamath River area where the Yurok had lived for millennia. As discussed below, federal and state aspirations to capture and divert water resources from the Reservation area may have also deterred investment in electric and telephone infrastructure.

III. The Ah Pah Dam: Tribes and Reservations Nullified for Resource Diversion

"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.⁶⁴

Federal government action that aspired to divert water resources from the Hoopa Valley Reservation in the second half of the twentieth century reinforced energy poverty on the Yurok and Hoopa reservations. 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."⁶⁵ 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.⁶⁶ 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.⁶⁷ At

⁶¹ *Id.*

⁶² Peggy O'Neill, Yurok Tribal Consultation meeting with CPUC Commissioner Catherine Sandoval and the CPUC Low-Income Oversight Board (Sept. 22, 2016) (on file with author).

⁶³ *Id.*

⁶⁴ Native Languages of the Americans: Yurok Indian Legends, NATIVE LANGUAGES OF THE AMERICANS, <http://www.native-languages.org/yurok-legends.htm> (last visited Feb. 15, 2018).

⁶⁵ See Linda Tuhiwai Smith, DECOLONIZING METHODOLOGIES, RESEARCH AND INDIGENOUS PEOPLES 53 (Zed Books Ltd., 2d ed. 2012).

⁶⁶ S.P. McCasland, INTERIM REPORT ON RECONNAISSANCE, U.S. BUREAU OF RECLAMATION (Jan. 1951), <https://babel.hathitrust.org/cgi/pt?id=uc1.d0005248000;view=1up;seq=45>.

⁶⁷ *Id.* at vii.

813 feet tall, nearly the height of San Francisco’s Transamerica Pyramid, the Ah Pah dam would have been California’s largest dam. Ah Pah’s hydroelectric generating station would have produced 413 megawatts of power at full capacity.⁶⁸ To put that into the modern energy context, many electricity plants built today to provide energy during peak demand produce up to 300-325 megawatts of electric power. The Bureau of Reclamation report envisioned the construction of transmission lines to export power from the Ah Pah dam’s hydroelectric plant.⁶⁹

The INTERIM REPORT ON RECONNAISSANCE omits mention of the Yurok, Hoopa, or Karuk tribes, rendering the tribes invisible.⁷⁰ 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. This bureaucratic erasure facilitated the Bureau’s proposed appropriation of tribal lands without consideration of rights of or risks to tribal members and the tribes.

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.”⁷¹ 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?

The report’s forwarding letter “points out the opportunity to serve the needs of the swelling populations in the arid Southwest by moving water otherwise destined to remain surplus and to waste into the ocean.”⁷² The characterization of Klamath River water as “wasted,” as it flows through tribal lands recalls the “terra nullius,” “empty land” doctrine, used to justify land

⁶⁸ *Id.* at 86.

⁶⁹ *Id.* at 87.

⁷⁰ *Cf.*, Kathryn E. Fort, *The Vanishing Indian Returns: Tribes, Popular Originalism, and the Supreme Court*, 57 ST. LOUIS L.J. 297, 308 (2013) (arguing that the “vanishing Indian” construct Justice Marshall used in *Johnson v. M’Intosh*, 21 U.S. 543, 556 (1823) reverberates through modern jurisprudence “erasing tribes through historical vanishing Indian language, ignoring tribes in opinions, and freezing tribes in one fixed, unobtainable point in history resulting in the Court embracing an ideology designed to eliminate tribal governments.”)

⁷¹ McCasland, *supra* note 66, at Introduction, 1.

⁷² *Id.* at 0 (attaching Letter from Michael W. Strauss, Commissioner, Bureau of Reclamation, to the Secretary of the Interior (Dec. 22, 1950)).

claims in the United States, Australia, and elsewhere based on the doctrine of “discovery.”⁷³ The river and its water, central to tribal life and protected by U.S. law as a tribal resource, were neither wasted nor there for the taking as “terra nullius.” As the U.S. Supreme Court observed in 1905, water and fish “were not much less necessary to the existence of the Indians than the atmosphere they breathed.”⁷⁴

The RECONNAISSANCE report notes “only relatively minor improvements now exist in this area.” The “cost of lands and relocation of improvements has been included in the project estimate,”⁷⁵ the report added. The absence 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.

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.⁷⁶ 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.⁷⁷ Although this colossal project was never approved, 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.

⁷³ Tuhiwai Smith, *supra* note 65, at 115; *See Cty. of Oneida v. Oneida Indian Nation*, 470 U.S. 226, 234 (1985) (“The ‘doctrine of discovery’ provided, however, that discovering nations held fee title to these lands, subject to the Indians’ right of occupancy and use.”); Adam Creppelle & Walter E. Block, *Property Rights and Freedom: The Keys to Improving Life in Indian Country*, 23 WASH. & LEE J. CIVIL RTS. & SOC. JUST. 315, 317 (2017) (“Europeans applied the Doctrine of Discovery to claim the lands of America. This is an international law applied by Europeans to *terra nullius*, ‘empty land,’ defined as an area inhabited by people who are not subject to international law nor belong to a recognized nation.”)

⁷⁴ *United States v. Winans*, 198 U.S. 371, 381 (1905).

⁷⁵ McCasland, *supra* note 66, at 66.

⁷⁶ *Id.* at 130. An acre foot is enough water to fill an acre to the depth of one foot.

⁷⁷ MARK REISNER, *CADILLAC DESERT, THE AMERICAN WEST AND ITS DISAPPEARING WATER* 280 (1987).

IV. The Legacy of the CPUC's 1991 Transmission Line Decision in *Smith River Power Plant v. PG&E* and the Yurok Energy Trust

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.⁷⁸ The Hoopa Tribe's federal recognition would have created additional levels of federal review for the Ah Pah dam proposal. Federal recognition of a tribe did not, however, give the Hoopa or any other tribe living on the Hoopa Valley Reservation, veto power over the dam project.

In the wake of the demise of the Ah Pah dam proposal in the mid-1950s, the *Jessie Short* litigation commenced in 1963 to determine who was among the class of beneficiaries of federal trust responsibility for the Hoopa Valley Reservation. After decades of litigation, The Hoopa-Yurok Settlement Act of 1988 split the Hoopa Valley Reservation into separate Yurok and Hoopa Reservations.⁷⁹ 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.⁸⁰ U.S. federal recognition of the Yurok Reservation and the Yurok Tribe facilitated Yurok participation in federal and state administrative and legal proceedings that affected their interests. Federal recognition also enabled the Yurok to obtain support for staff and other resources critical to the Yurok Tribe's ability to effectively act as the electric grid developer.

Following the Hoopa-Yurok Settlement Act, the Yurok Tribe led efforts to bring electric grid access to the Yurok Reservation. This required navigating the federalist system that divides electricity regulation between the states and the federal government.

Prior to 1935, "the States possessed broad authority to regulate public utilities" and "most electricity was sold by vertically integrated utilities that had constructed their own power plants, transmission lines, and local delivery systems."⁸¹ State public utility commissions today regulate

⁷⁸ See, e.g., Baker & Kusel, *supra* note 50, at 6; Hoopa-Yurok Settlement Act, *supra* note 7, § 9(e); Amy C. Brann, *Karuk Tribe of California v. United States: The Courts Need A History Lesson*, 37 NEW ENG. L. REV. 743, 751 (2003) (observing that the Indian Reorganization Act imposed a non-Indian form of government upon them).

⁷⁹ *Hoopa-Yurok Settlement Act*, *supra* note 7.

⁸⁰ *Id.*; YUROK CONST., *supra* note 30, at Pmbl., 3.

⁸¹ *New York v. FERC*, 535 U.S. 1, 5 (2002).

electric distribution and retail electricity necessary to access electric facilities and services. States also permit intrastate transmission siting and construction pursuant to environmental review and a determination of electric need.⁸² Accessing the electric grid on Native American reservations usually requires interconnection with electric distribution or transmission lines under state jurisdiction. In some circumstances, tribes can connect to interstate transmission facilities if nearby resources are available. In some states, rural electric cooperatives may also serve reservations. California only has three small rural electric cooperatives, none near the Yurok reservation.⁸³

In 1935, Congress passed the Federal Power Act (FPA) and charged the Federal Power Commission with authority to regulate “the transmission of electric energy in interstate commerce” and “the sale of electric energy at wholesale in interstate commerce.”⁸⁴ In 1977 the Department of Energy Organization Act renamed the Federal Power Commission the Federal Energy Regulatory Commission (FERC).⁸⁵ Native American reservations are federal enclaves, but the federal government has not assumed fiscal or programmatic responsibility for ensuring electricity access on reservations. The federal government has provided some support for electric grid and renewable projects through the Rural Utility Service (RUS), though RUS programs have been chronically underfunded. RUS grants require matching funds, causing hardships when tribes do not have other sources of revenue to support project development or the grant match.

In California, CPUC Rules 15 and 16, initially adopted in 1915 by the CPUC’s predecessor, the California Railroad Commission, govern electric line extension to connect with investor-owned utility electric facilities. Those rules promote extension of electric service, but allow an investor-owned utility (IOU) to decline a service extension request when it would result in an “undue hardship upon the utility or its existing consumers.”⁸⁶ In unincorporated areas

⁸² See e.g., CPUC Decision D. 16-12-001 (Dec. 1, 2016), Decision Addressing The Southern California Edison Company Application For A Permit To Construct The Valley South 115 Kilovolt Subtransmission Project, 2-3 (Application 14-12-013).

⁸³ See GOLDEN STATE POWER COOPERATIVES, <https://www.gspower.org/members/> (last visited Feb. 15, 2018).

⁸⁴ FERC v. Electric Power Supply Ass’n, 136 S.Ct. 760, 767, as revised (Jan. 28, 2016) (citations omitted); Federal Power Act (FPA), § 213, 49 Stat. 847, and as amended, 16 U.S.C. § 824 *et seq.*, (1935).

⁸⁵ Michael C. Blumm, *A Trilogy of Tribes v. FERC: Reforming the Federal Role in Hydropower Licensing*, 10 HARV. ENVTL. L. REV. 1, 59 (1986) *citing* Pub. L. No. 95-91, 91 Stat. 565 (codified as amended at 42 U.S.C. §§ 7101-7352 and in scattered sections of 3, 5, 7, 12, and 15 U.S.C. (1982)).

⁸⁶ CPUC, Re Rulemaking on the Commission's Own Motion to Consider the Line Extension Rules (Mar. 31, 1992) 1992 WL 511734 (citing 7 C.R.C. [California Railroad Commission] 830, 862) [hereinafter *CPUC 1992 Line*]

outside of a municipality, a utility was only required to make “reasonable extensions” as “it can agreed upon with the applicant for service” but where “construction of an extension at the utility’s sole expense will in its [the utility’s] opinion work an undue hardship upon the utility or its existing consumers, the matter may be submitted to the Commission...”⁸⁷ CPUC Rules 15 and 16 sought to promote service to Californians while constraining “unreasonable” cost expenditures ultimately borne by those who pay electric bills.⁸⁸

California shifted its policies in 1994 from fostering universal electric service to cost recovery that required the “cost-causer” to pay for electric line extensions that exceed the construction allowance the CPUC selected.⁸⁹ Those state rules did not specifically address the needs of Native American reservations where electric distribution lines were never built.

As part of the Tribe’s plan to seek energy access and self-sufficiency, the “Yurok Transition Team” (YTT) intervened in the 1989 CPUC case, *Smith River Power Plant Associates v. PG&E*.⁹⁰ The Smith River Power cogeneration plant harnesses heat from its timber processing facility to generate electricity. Smith River Power was a “qualifying facility” (QF) within the definition of the federal Public Utility Regulatory Policies Act (PURPA) of 1978, adopted to diversify American energy resources in the wake of the energy crisis following the 1973-1974 oil embargo.⁹¹ PURPA required PG&E to take the power generated by the Smith River plant.⁹² Exporting power from the plant to PG&E required transmission line construction which would be paid for by revenues collected from the Transmission Access Charge (TAC) collected from electricity ratepayers.⁹³

Extension Rulemaking]. CPUC Rule 15 applied to line extensions within municipalities and Rule 16 applied to line extensions in unincorporated areas.

⁸⁷ CPUC Decision 2689, In the Matter of the Practice of Water, Gas, Electric, and Telephone Utilities Requiring Deposits Before Rendering Service Decisions of the California Railroad Commission, Vol. VII, 869 (Aug. 12, 1915), <https://babel.hathitrust.org/cgi/pt?id=nyp.33433057093977;view=1up;seq=879>.

⁸⁸ *CPUC 1992 Line Extension Rulemaking*, *supra* n. 86, at § I (noting that electric line extension rules are animated by two rules. “The first is the public policy decision that utilities generally have an obligation to make extensions to serve new customers. The second is an escape clause from unreasonable obligations.”)

⁸⁹ See CPUC D. 94-12-026; CPUC D. 97-12-098; CPUC D.07-07-019, *supra* note 11.

⁹⁰ *Smith River Power v. PG&E*, *supra* note 5.

⁹¹ *Id.* at 1 (citing PURPA 16 U.S.C. § 796, *et seq.* (2012))

⁹² *Id.*

⁹³ CPUC, ELECTRIC TRANSMISSION RATES AND RELATED FERC PROCEEDINGS, <http://www.cpuc.ca.gov/General.aspx?id=5240> (last visited Feb. 15, 2018).

Smith River Power initially proposed a transmission path through the Yurok Reservation to serve Yurok electricity needs and connect with PG&E at the Hoopa Tribal Utility in the Hoopa Square. PG&E and Smith River Power later entered into a proposed settlement and asked the CPUC to allow them to choose either the transmission route through the Yurok Reservation or a coastal route using PacificCorp (then PPL) transmission line capacity. They also proposed to establish a Yurok Energy Trust “for the purpose of providing electrification to the Yurok Reservation,” with payments into the trust varying based on the revenues generated from the power exports and the line route selected.⁹⁴

In December 1990, the Yurok Transition Team filed leave to intervene to ensure that the Yurok Tribe’s interests were considered in the CPUC’s proceeding. The Petition to intervene stated “approximately 80 Indian households are located in PG&E’s service territory; these residents of the Yurok Reservation have unsuccessfully sought electric utility service from PG&E,” and the qualifying facility operator, Smith River, “has proposed a means of providing the Yurok Tribe with resources needed to bring electricity to the reservation, as well as income to the Yurok and Hoopa Tribes.”⁹⁵ PG&E objected, fearing “intervention by the [Yurok Transition Team] YTT would shift the focus of the proceeding to PG&E’s past interaction with the Yurok Indians.”⁹⁶ The CPUC granted the YTT leave to intervene without elaborating on alleged PG&E refusals to extend service in the Yurok Reservation.

The CPUC Decision allowed Smith River Power and PG&E to choose either the coastal route or the line through the Yurok Reservation.⁹⁷ Smith River Power and PG&E selected and constructed the coastal line, not the line that would have served as an infrastructure scaffold for Yurok electricity needs. The Commission also approved the settling parties’ proposal to create a Yurok Energy Trust Fund, providing \$1.58 million, “for the purpose of providing electrification to the Yurok Reservation as requested by the Yurok Transition Team or its successor.”⁹⁸

⁹⁴ *Id.*

⁹⁵ *Id.* at section 4, Petition to Intervene.

⁹⁶ *Id.*

⁹⁷ *Smith River Power v. PG&E*, *supra* note 5, at Finding of Fact 12.

⁹⁸ *Id.*

PG&E moved in 1993 to amend the 1991 settlement to allow for one lump sum payment of \$1.58 million based on the anticipated value of the energy payments. The CPUC did not require the Yurok Energy Trust Fund to include any payments commensurate with the cost of the proposed transmission line through the Yurok Reservation that could have served Yurok energy needs. Had that line been built, distribution lines could have fed off a utility substation connected to that energy backbone and greatly reduced the cost of building distribution lines on the Yurok Reservation. Based on PG&E transmission cost estimates presented in 2009, building such a 53 mile 60-70 kilovolt (kv) transmission line in forest terrain would require approximately \$105 million in 2009 dollars, \$121 million in 2017, not including permitting and other siting or development expenses.⁹⁹ In my experience as a CPUC Commissioner for six years who evaluated and voted on transmission line projects, I believe this cost estimate is low.

The Yurok Tribe nurtured the Yurok Energy Trust \$1.58 million seed money for twenty-three years as matching funds or to support grant planning.¹⁰⁰ The fund did not provide enough money to replicate the function of the transmission line through the Yurok Reservation proposed by Smith River Power. O’Neill reported that the “energy trust fund provided only a small fraction of the funds necessary to electrify the reservation,” and that “the energy trust funds have been used primarily to pay PG&E for the cost to design the electrical grid so the Tribe can seek RUS grant funds to build the grid.”¹⁰¹

V. Federal Duties and Responsibilities to Tribes and Tribal Resources Require Federal Support for Twenty-First Century Energy Services on Native American Reservations

This section discusses legal frameworks that may require the federal government to assist in providing energy access to the reservation. An important starting point is the federal trust relationship. “Nearly every piece of modern legislation dealing with Indian tribes contains a

⁹⁹ Peter Ng, Pacific Gas & Electric, Presentation to Stakeholder Meeting, California Independent System Operator, Folsom: Draft Unit Cost for Transmission Lines, 6 (Feb. 26, 2009), http://www.caiso.com/Documents/PresentationbyPG_E-DraftUnitCostGuide_TransmissionLines26-Feb-2009.pdf.

¹⁰⁰ Telephone interview with Peggy O’Neill, Planning Director, Nicole Sager, Asst. Planning Director, and Eugene O’Rourke, Planner II, Yurok Tribe (August 25, 2017) (on file with the author) [hereinafter *Yurok Planning Dept. Telephone Interview*].

¹⁰¹ O’Neill Oct. 2, 2017 email, *supra* note 30.

statement reaffirming the trust relationship between tribes and the federal government.”¹⁰² Where Congress has assumed a fiduciary duty for the management of Native American tribal resources, that trust relationship reflects an evolving “spectrum of obligations and responsibilities.”¹⁰³

In this instance, it can be argued that the federal government’s trust responsibility to manage timber resources requires effective access to energy. Congress mandated that the U.S. government manage certain tribal assets consistent with evolving, contemporary standards befitting a fiduciary; statutory duties exemplified by federal responsibilities for tribal timber management. The Supreme Court noted in *U.S. v. Mitchell (Mitchell II)* that the statute conferring upon the Secretary of the Interior authority over the sale of timber on Native American reservations requires federal timber management “based upon a consideration of the needs and best interests of the Indian owner and his heirs.”¹⁰⁴ *Mitchell II* determined this statute imposes fiduciary obligations on federal government tribal timber resource management.¹⁰⁵ *Mitchell II* recognized a fiduciary duty to develop facilities and obtain rights consistent with modern timber harvest standards.¹⁰⁶ The Supreme Court in *Mitchell II* found the federal government’s adherence to outdated logging practices inconsistent with federal fiduciary responsibility, which must evolve to reflect contemporary standards.

The federal government administers the timber on what was the Hoopa Valley Reservation, now divided into the Hoopa and Yurok Reservations, as trustee for the Indian beneficial owners under the principles of sustained-yield management governed by the same statute at issue in *Mitchell II*, 25 U.S.C. §§ 405–407, 466.¹⁰⁷ Federal fiduciary duties to manage timber on a sustained-yield basis in consideration of “the needs and best interests of the Indian owner and his heirs,”¹⁰⁸ may require energy resource access and use that promotes forest and tribal sustainability. If it can be demonstrated that the federal failure to build electric distribution

¹⁰² *Jicarilla Apache Nation v. United States*, 88 Fed.Cl. 1, 5 (Fed. Cl. 2009).

¹⁰³ *Jicarilla Apache Nation v. United States*, 100 Fed. Cl. 726, 731 (Fed. Cl. 2011) (citing 25 U.S.C. § 406(a) (2012)).

¹⁰⁴ *United States v. Mitchell (“Mitchell II”)*, 463 U.S. 206, 209 (1983) (citing 25 U.S.C. §§ 405–407, 25 U.S.C. § 466 (now cited as 25 U.S.C. § 5109 (2012))).

¹⁰⁵ *Id.* at 224.

¹⁰⁶ *Jicarilla Apache Nation*, 100 Fed.Cl. at 735 citing *Mitchell II*, 463 U.S. at 210, 228.

¹⁰⁷ *Short v. United States*, 12 Cl.Ct. 36, 41 (Cl. Ct. 1987), *on reconsideration* 25 Cl.Ct. 722 (Cl. Ct. 1992).

¹⁰⁸ *See* 25 U.S.C. § 406 (2012); 25 U.S.C. § 5109 (2012) (formerly cited as 25 U.S.C. § 466).

systems undercuts modern forest management, such as by increasing reliance on diesel generators, then the federal government has violated its obligation to properly manage the timber based on “the needs and best interests of the Indian owner and his heirs.”¹⁰⁹

The federal government also has statutory responsibility for tribal health and welfare. The Snyder Act of 1921 authorizes the Bureau of Indian Affairs to “direct, supervise, and expend such moneys as Congress may from time to time appropriate, for the benefit, care, and assistance of the Indians throughout the United States” for purposes including “[g]eneral support and civilization,” “relief of distress and conservation of health[,]” and assistance with property, employment, and “administration of Indian affairs.”¹¹⁰ The statute delegates to the federal government responsibility for “general assistance, education, health, economic development, administration of Indian property, public facilities, law enforcement, and transportation.”¹¹¹ “The statute is liberally construed for the benefit of Indians.”¹¹²

The federal government has also set a goal for Indian health care¹¹³ to “maintain and improve the health of the Indians....”¹¹⁴ The Patient Protection and Affordable Care Act amended and reauthorized the Indian Health Care Improvement Act (“IHCA”).¹¹⁵ The provision of “resources, processes, and structure that will enable Indian tribes and tribal members to obtain the quantity and quality of health care services and opportunities that will eradicate the health disparities between Indians and the general population of the United States” was a “major

¹⁰⁹ *Id. See, e.g.*, U.S. ENVIRONMENTAL PROTECTION AGENCY (E.P.A.), CLEAN DIESEL, <https://www.epa.gov/cleandiesel/learn-about-clean-diesel> (last visited Feb. 26, 2018) (“Emissions from diesel engines contribute to the production of ground-level ozone which damages crops, trees and other vegetation. Also produced is acid rain, which affects soil, lakes and streams and enters the human food chain via water, produce, meat and fish.” “Reducing greenhouse gas (GHG) emissions from diesel engines through improved fuel economy or idle reduction strategies can help address climate change, improve our nation’s energy security, and strengthen our economy.”) Ground level ozone increase risks to trees and vegetation such as Red Alder, found on the Yurok Reservation. *See* U.S. E.P.A., OZONE POLLUTION, <https://www.epa.gov/ozone-pollution/ecosystem-effects-ozone-pollution>, (last visited Feb. 26, 2018); MIA WAPNER, WETLANDS SPECIES AND WATER TEMPERATURE ANALYSIS, OCT. 1, 2013- SEPT. 30, 2015, YUROK TRIBE ENVIRONMENTAL PROGRAM, tbl.5, http://www.yuroktribe.org/departments/ytep/documents/Wetlands_web1.pdf, (last visited Feb. 26, 2018).

¹¹⁰ Robert McCarthy, *The Bureau of Indian Affairs and the Federal Trust Obligation to American Indians*, 19 *BYU J. PUB. L.* 1, 118 (2004) (citing 25 U.S.C.A. § 13 (2012)).

¹¹¹ *Id.*

¹¹² *Id.*; *Pub. Serv. Co. of N.M. v. Barboan*, 857 F.3d 1101, 1108 (10th Cir. 2017) (“A well-established canon of Indian law states that ‘statutes are to be construed liberally in favor of the Indians, with ambiguous provisions interpreted to their benefit.’”) (citations omitted).

¹¹³ The Transfer Act of 1954, 42 U.S.C. §§ 2001, *et seq.* (2012).

¹¹⁴ *Blatchford v. Alaska Native Tribal Health Consortium*, 645 F.3d 1089, 1091 (9th Cir. 2011).

¹¹⁵ 25 U.S.C. § 1602 (2012), *Pub. L. No.* 111-148.

national goal of the United States” adopted in IHCIA.¹¹⁶ In the amended IHCIA “Congress declares that it is the policy of this Nation, in fulfillment of its special trust responsibilities and legal obligations to Indians—(1) to ensure the highest possible health status for Indians and urban Indians and to provide all resources necessary to effect that policy.”¹¹⁷

Safe and reliable electricity is essential for the improvement of Native American health. Electricity and communications facilities will enable Native American communities to obtain health care and emergency services, including 9-1-1 access widely available in non-reservation communities.¹¹⁸ Grid electricity will enable communications and Internet construction that will open new channels to access and distribute health services. For example, contemporary telemedicine using a computer connection and camera can administer age-related macular degeneration exams through a computer-based test taken at the patient’s home and sent to their doctor via a landline or cell phone.¹¹⁹ Grid electricity is foundational to enabling these services, and achieving Congress’ goal of improving Native American health.

The electric grid’s absence leads to dependence on fuels such as diesel, wood, and kerosene which produce fine particulate matter, PM 2.5, known to be hazardous to human health. “Short-term exposure to PM2.5 is likely to be causally associated with mortality from cardiopulmonary diseases, hospitalization and emergency department visits for cardiopulmonary diseases, increased respiratory symptoms, decreased lung function, and physiological changes or biomarkers for cardiac changes.”¹²⁰ “Long-term exposure to PM2.5 is likely to be causally associated with mortality from cardiopulmonary diseases and lung cancer, and effects on the respiratory system such as decreased lung function or the development of chronic respiratory disease.”¹²¹ Mitigating health risks from PM 2.5 exposure is necessary to maintain and improve tribal health to levels comparable to the general U.S. population as required by federal health care policy under the amended IHCIA.

¹¹⁶ 25 U.S.C. § 1601(2) (2012).

¹¹⁷ *Id.*

¹¹⁸ Email from Josh Norris, Yurok Tribe Attorney, to author (Oct. 2, 2017) (on file with author).

¹¹⁹ Scott Jung, *Eyes: The Window onto the Future of Telemedicine*, TELEMEDICINE, March 7, 2017, <http://www.telemedmag.com/article/eyes-window-future-telemedicine-2/>.

¹²⁰ T.C. Bond, S.J. Doherty, et. al., *supra* note 22, at 5517 (citing EPA, INTEGRATED SCIENCE ASSESSMENT (ISA) FOR PARTICULATE MATTER, (2009)).

¹²¹ *Id.*

Yurok Attorney Josh Norris highlighted “[a]nother hidden danger” of lack of access to grid electricity: “people having to drive 20+ miles with trunks full of fuel for their generators on winding, single lane roads at least a couple times per week.”¹²² The absence of electricity also precludes use of electric vehicles, which could reduce GHGs, while increasing the need to drive to access basic services. The transportation sector “remains the largest source of GHG emissions in the state [of California], accounting for 37% of the inventory, and had an increase in emissions in 2015.”¹²³ Lack of electricity and communications facilities increases GHG emissions as many Yurok residents without phones or electricity must drive 45 minutes each way to get to an area where there is a landline or cell phone reception.¹²⁴

Students and parents without access to electricity often lack Internet or phone access at home because communications and electricity are interdependent infrastructures. Communications services including wireless services need electricity to power antennas, towers, central offices, and remote terminals that transmit and receive Internet, phone, and data signals. Education increasingly requires computer and Internet access to do homework, receive school notices, or check grades. Congress declared in the Indian Self-Determination and Education Assistance Act that a major national goal of the United States is to “provide the quantity and quality of educational services and opportunities which will permit Indian children to compete and excel in the life areas of their choice, and to achieve the measure of self-determination essential to their social and economic well-being.”¹²⁵ Lack of electricity undercuts educational quality while increasing health risks associated with diesel generator use at school or home.

¹²² Email from Josh Norris, *supra* note 118.

¹²³ CARB, CALIFORNIA GREENHOUSE GAS EMISSIONS INVENTORY, CALIFORNIA GREENHOUSE GAS EMISSIONS FOR 2000 TO 2015 – TRENDS OF EMISSIONS AND OTHER INDICATORS – 2017 EDITION, 6, fig. 7, June 6, 2017, https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2015/ghg_inventory_trends_00-15.pdf [hereinafter *CARB GHG Inventory*].

¹²⁴ Catherine J.K. Sandoval, Commissioner, California Public Utilities Commission, Remarks to the CPUC Voting Meeting: Thanks for the Opportunity to Serve as a Commissioner of the California Public Utilities Commission, 2 (December 15, 2016)

http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Organization/Commissioners/Catherine_Sandoval/Remarks%20of%20Catherine%20J.K.%20Sandoval%20Thank%20you%20for%20service%20on%20the%20CPUC,%20December%202016.pdf [hereinafter *Sandoval, Thanks for the Opportunity to Serve*].

¹²⁵ Public Law 93-638, as amended; 25 U.S.C. § 450a (1998) [now 25 U.S.C. § 5302 (2012)].

Jack Norton Elementary School on the Yurok Reservation, built by the State of California in 1959 when that area was part of the Hoopa Reservation, runs on a diesel generator.¹²⁶ The Yurok Tribe's electric construction project grant includes funding to connect the electric lines planned to reach the road near the school by fall 2018 up the winding and steep driveway to the school's location. Until then, a noisy diesel generator that emits high levels of black carbon powers the school's refrigerator and lights.

When I visited in January 2017 with Yurok Air Quality Specialist Joe Hostler and Dr. Kirk Smith's U.C. Berkeley research team, Jack Norton Elementary School lacked access to the Internet as they found satellite Internet service unreliable in their forest setting, though wireless Internet has since been connected. The teachers, students, and community of Jack Norton Elementary have worked hard to improve student performance on California's standardized tests, taken through computers since 2014.¹²⁷ In 2015-2016, Jack Norton student scores on the state's English language and mathematics proficiency tests were lower than that of many other California test-takers, though their scores improved from the previous year.¹²⁸

Electricity access will facilitate use of computers, buildout of a communications network that reliably reaches the school, and the ability of children to practice computer, reading, math, and other skills at school and at home. Children could switch from reading by candlelight or kerosene at home to electricity, increasing their study time and reducing strain on their eyes, lungs, and health. Building electric grid access and phasing out diesel generator use will improve Native American health, increase opportunities for educational success, advance America's national and global economic competitiveness, enhance democracy, and improve the environment.

Providing safe, reliable, and sustainable electricity access is required to meet federal health and education policy goals, and to comply with state duties to educate children in

¹²⁶ JACK NORTON ELEMENTARY, SCHOOL ACCOUNTABILITY REPORT CARD 7 (2016-2017), <http://jnes.ktjUSD.k12.ca.us/documents/SARC%20Reports/2017%20SARC.pdf> (explaining that the school is "off the grid" and "requires a generator for daily operations." "Jack Norton recently connected to the Yurok Tribe's water system and is expecting to connect to PG&E in the near future.")

¹²⁷ SMARTER BALANCE ASSESSMENT CONSORTIUM, *supra* note 21.

¹²⁸ JACK NORTON ELEMENTARY, SCHOOL ACCOUNTABILITY REPORT CARD, *supra* note 126, at 5.

functional school facilities while meeting California’s environmental goals.¹²⁹ As the following section explains, the Yurok Tribe’s leadership to build the electric grid to reach Yurok Reservation homes and institutions highlights the need for federal, state, philanthropic, and private sector support to close the electricity gap on Native American reservations.

VI. The Yurok Tribe Lights the Way through its Work to Bring Electricity to the Reservation

This section discusses the Yurok Tribe’s work to build electric grid access, and the importance of federal, state, philanthropic, and private sector support for those efforts. For more than twenty-six years, the Yurok Tribe has been leading the electric grid construction project, conducting studies of energy needs, evaluating energy resource options, securing financing, and overseeing construction. More homes remain in need of electric access as this work progresses.

1. Safe, Reliable, and Sustainable Energy Service at Just and Reasonable Rates

Following the federal government’s authorization in 1988 for the Yurok Tribe to organize under the 1934 Indian Reorganization Act, the Yurok Tribe initiated strategies to build the electric grid in reservation areas no utility had served. The 2005 tribal utility feasibility study reported that “[h]istorically 70% of residents on the Yurok Reservation have not had convenient access to power or phone.”¹³⁰

Lack of convenience understates the challenges Yurok reservation residents face. “Many young people described doing homework by candlelight. Internet access was impossible” before electricity.¹³¹ “Swaths of homes don’t have electricity, phone service, or Internet connectivity,” observed Javier Kinney, a Yurok Tribe member and Weitchpec resident who is the Director of

¹²⁹ See, e.g. CALIFORNIA DEPT. OF EDUCATION, WILLIAMS SETTLEMENT AND THE SARC [State Accountability Report Card], <https://www.cde.ca.gov/ta/ac/sa/williamsimpact.asp> (last visited Feb. 16, 2018) (implementing Senate Bill (SB) 550 (Chapter 900, Statutes of 2004) requiring that a school facility is maintained as “clean, safe, and functional as determined pursuant to an interim evaluation instrument developed by the Office of Public School Construction,” but not requiring “capital enhancements beyond the standards to which the facility was designed and constructed.”) Discussion of the state’s duties to provide for adequate school facilities connected to electricity to meet California education standards in schools such as Jack Norton Elementary, a State of California school run by the Klamath-Trinity School District, is beyond this chapter’s scope, but is a topic that merits further research.

¹³⁰ JOLLEY & SCHATZ ENERGY RESOURCE CENTER, *supra* note 10.

¹³¹ *Power to the People, Tribe Secures Funding to Electrify Family Houses, Government Buildings and Schools*, YUROK TODAY, THE VOICE OF THE PEOPLE, POWER TO THE PEOPLE (Jan. 2012), http://www.yuroktribe.org/documents/JANUARY_2012.pdf [hereinafter YUROK TODAY, *Tribe Secures Electricity Funding*].

the Yurok Tribe Office of Self-Governance.¹³² Absence of electricity and communications services contributes to social isolation and a lack of economic, educational, health care, emergency services, and other opportunities and resources taken for granted by communities connected to the electric and communications grids. The Yurok Tribe declared a state of emergency in December 2015 due to the high number of youth suicides concentrated in the area lacking electricity.¹³³

The Yurok Tribe determined that “lack of access to power also severely limits economic development, which keeps tribal members from living on the Reservation.”¹³⁴ Lack of electricity access contributes to and reinforces poverty. The 2000 Census documented Yurok median annual personal income for those living on the reservation as \$6,839, with a 74% unemployment rate, and 39.7% living in poverty.¹³⁵ Poverty rates are highest, 80 percent on average, in the upriver portions of the reservation that lack electricity.¹³⁶ The California Air Resources Board noted that many communities with sources and sectors responsible for producing black carbon are located in rural communities in the northern part of the State and the Sierra that “have some of the worst pollution burdens in the State, and high rates of poverty and unemployment.”¹³⁷ The 2007 report on Wind and Hydro potential to serve the Yurok Reservation found “approximately 40% of residents’ income is spent on energy.”¹³⁸

Households lacking electric grid access are not currently eligible for CPUC programs to increase low-income household energy efficiency or provide support for energy bills as they are

¹³² Pike, *supra* note 1.

¹³³ Ryan Burns, *Suicide Emergency: Yurok Youth Train to Help Their Own, Yurok Students Receive Mental Health Training as Tribe Works to Prevent More Youth Suicides*, INDIAN COUNTRY TODAY (December 29, 2016), <https://indiancountrymedianetwork.com/culture/health-wellness/suicide-emergency-yurok-youth-train-help/>.

¹³⁴ YUROK TODAY, *Tribe Secures Electricity Funding*, *supra* note 131.

¹³⁵ *Klamath Facilities Removal EIS/EIR* *supra* note 10, 3.5-18 (citing U.S. Census Bureau 2000).

¹³⁶ U.S. DEP’T OF THE INTERIOR, BUREAU OF RECLAMATION, TECHNICAL SERV. CENTER, DENVER, COLO., YUROK TRIBE SOCIOCULTURAL/SOCIOECONOMICS EFFECTS ANALYSIS TECHNICAL REPORT FOR THE SECRETARIAL DETERMINATION ON WHETHER TO REMOVE FOUR DAMS ON THE KLAMATH RIVER IN CALIFORNIA AND OREGON 35 (Sept. 2011), https://klamathrestoration.gov/sites/klamathrestoration.gov/files/EIS-EIR-Draft/Econ-Reports/Tribes/Yurok_9-16_FULL.pdf.

¹³⁷ CARB, *Reducing SLCP*, *supra* note 27, at 32.

¹³⁸ AUSTIN NOVA, ET AL., WIND AND HYDRO ENERGY FEASIBILITY STUDY FOR THE YUROK TRIBE, DOE TRIBAL ENERGY PROGRAM REV. MEETING 6 (Nov. 7, 2007), https://www.energy.gov/sites/prod/files/2016/01/f28/0711review_zoellick1.pdf.

not IOU customers.¹³⁹ Once the grid is built farther into the Yurok Reservation and households are connected to the grid, they will be eligible for the CPUC’s Energy Savings Assistance Program (ESAP) that provides a variety of energy efficiency and weatherization measures that can reduce the need for wood burning for heating and lower energy consumption.¹⁴⁰ This chapter recommends that the Yurok Tribe and the CPUC hold consultations to develop an agreement to make customers slated to receive grid electricity in the next two or three years eligible now for ESAP energy assistance measures. Promptly installing energy efficiency measures will prevent a surge in electricity consumption and high electric bills when the line is energized in 2018 and homes are connected to the grid. It will also leverage tribal work to upgrade inside wiring to accept electric service.

Low-income households who become utility customers will also become eligible for California Alternative Rates for Energy (CARE) which provides up to a 30-35% discount on electricity bills. Federal programs such as the Low Income Heating Assistance Program (LIHEAP) and Tribal LIHEAP have been chronically underfunded. While federal programs support some weatherization assistance and emergency fuel bill assistance, their budgets have been declining and President Trump’s 2018 budget proposed to cut LIHEAP.¹⁴¹

Building the electric grid to the Jack Norton Elementary School and the Wautec community in the reservation downriver of the school are the main goals of the Yurok Tribe’s current electric grid extension project. Jack Norton Elementary has been powered by a diesel generator since its founding in 1959.¹⁴² Generator breakdowns often result in school cancellations.¹⁴³ When I visited the Yurok Reservation on September 22, 2016 for a consultation

¹³⁹ See, CPUC D. 16-11-022, 3-4, (Application 14-11-007) (Nov. 21, 2016) (adopting Alternate Proposed Decision of Commissioner Catherine Sandoval, and directing the CPUC through California Public Utilities Code Section 2790(a) to require an investor-owned electrical or gas corporation to perform home weatherization services for low-income customers).

¹⁴⁰ *Id.* at 188–89, 280 (directing IOUs to consult with tribes in their service territory, assess and report on tribal participation in ESA and CARE, and consult with non-profits, tribal government, local agencies, and non-profit housing corporations to encourage ESA multifamily enrollment).

¹⁴¹ OFF. OF MGMT. & BUDGET, AMERICA FIRST, A BUDGET BLUEPRINT TO MAKE AMERICA GREAT AGAIN 22 (2017) (proposing elimination of LIHEAP stating without discussion of analysis that it is “a lower-impact program and is unable to demonstrate strong performance outcomes”); The Associated Press, *Native Americans Fear End of Federal Heating Help*, FORTUNE (Apr. 15, 2017, <http://fortune.com/2017/04/15/native-americans-federal-funding/>).

¹⁴² JACK NORTON ELEMENTARY, SCHOOL ACCOUNTABILITY REPORT CARD 7, *supra* note 126.

¹⁴³ YUROK TODAY, *Tribe Secures Electricity Funding*, *supra* note 131.

meeting with the Yurok Tribe while serving as a CPUC Commissioner, the noise from the school's diesel generator registered at machine-shop levels.

At the Yurok Tribe's invitation, I visited the Yurok Reservation in January 2017 in my role as a Santa Clara University Law Professor, along with Dr. Kirk Smith, Director, Global Environmental Health Program and Environmental Program, School of Public Health, University of California Berkeley, and the U.C. Berkeley Household Energy, Health, and Climate Research Group. Yurok Tribe Air Quality Specialist Joe Hostler led our visit to the reservation including the elementary school site where teachers complained to us about burning eyes and headaches while the diesel generator is running. Hostler reported receiving similar complaints from Jack Norton students and teachers.¹⁴⁴ The diesel generator appeared to have few pollution controls. The School District operates the diesel generator twenty-four hours a day, seven days a week, to power school needs including the cafeteria refrigerator. Constant operation and the generator's proximity to the cafeteria air vent raised health and compliance concerns.¹⁴⁵

Since 1990, the State of California has included diesel emissions on the Proposition 65 list of cancer-causing substances.¹⁴⁶ Diesel particulate matter (DPM) is typically composed of carbon particles ("soot," also called black carbon, or BC) and numerous organic compounds, including over 40 known cancer-causing organic substances.¹⁴⁷ "The microscopic particles in diesel exhaust are less than one-fifth the thickness of a human hair and are small enough to penetrate deep into the lungs, where they contribute to a range of health problems."¹⁴⁸ California's Office of Environmental Health Hazard Assessment (OEHHA) reported that "long-

¹⁴⁴ Email from Joe Hostler, Yurok Tribe Air Quality Specialist, to author (Oct. 10, 2017) (on file with the author).

¹⁴⁵ Kirk R. Smith, MPH, PhD., Zoe Chafe, MPH, PhD., Maria Hernandez, MPH, L. Drew Hill, MPH & A.J. Pillarisetti, MPH, PhD., The Household Energy, Health, and Climate Research Group, School of Public Health, U.C. Berkeley, Findings and Recommendations from a Visit to Jack Norton Elementary School, Yurok Tribe, California, Feb. 13, 2017, at 2 ("We found that the proximity of the diesel generator, which seems currently to have little pollution control, to the school likely results in unhealthy levels of exposure to diesel emissions to the students and staff of the school.") [hereinafter *Smith et. al, Findings and Recommendations*] (on file with the author).

¹⁴⁶ OFF. OF ENVTL HEALTH HAZARD ASSESSMENT (OEHHA), DIESEL EXHAUST PARTICULATE, <http://oehha.ca.gov/chemicals/diesel-exhaust-particulate> (last visited Feb. 16, 2018).

¹⁴⁷ CARB, OVERVIEW: DIESEL EXHAUST AND HEALTH (Apr. 12, 2016), <https://www.arb.ca.gov/research/diesel/diesel-health.htm> (In 1998, the California Air Resources Board (ARB) identified DPM as a toxic air contaminant based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects) [hereinafter *CARB, Diesel Exhaust and Health*].

¹⁴⁸ *Id.*

term exposure to diesel exhaust particles poses the highest cancer risk of any toxic air contaminant evaluated by OEHHA.”¹⁴⁹ DPM health effects “include premature death, hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma, increased respiratory symptoms, and decreased lung function in children.”¹⁵⁰ Those “most vulnerable to non-cancer health effects are children whose lungs are still developing and the elderly who often have chronic health problems.”¹⁵¹

To reduce reliance on diesel generators and increase access to reliable and sustainable energy services, the Yurok Tribe studied and tested renewable energy options and found them not reliable enough to support tribal residential and institutional needs. The Tribe’s 2007 energy planning study found that “[m]ore than 30% of [solar and some microhydro] systems assessed were in need of repairs,” and “30% of the solar electric systems needed tree trimming to reduce array shading.”¹⁵² Maintenance issues ranged from improperly connected wires to dirty solar panels, battery issues, and the need for tree trimming.

Smoke from nearby forest fires dims solar energy production by depositing ash and soot on solar panels. O’Neill observed that “[d]uring summer months it is difficult to rely solely on solar power”¹⁵³ as forest fires and fog often obscure the sun. “Telemetry, required to monitor the safety of community water systems” through communications systems that include wireless hops to wired Internet infrastructure, cannot adequately perform “without electricity which raises community health concerns” about water safety, O’Neill reported.¹⁵⁴

The forest and mountain shade covering much of the reservation limits solar generation. Paul Romero, Yurok Tribe Information Services Director, set up solar panels to support some of the Tribe’s communications services and sensors, but found solar was most productive for one

¹⁴⁹ OEHHA, HEALTH EFFECTS OF DIESEL EXHAUST (May 21, 2001), <https://oehha.ca.gov/air/health-effects-diesel-exhaust>.

¹⁵⁰ CARB, *Diesel Exhaust and Health*, *supra* note 147.

¹⁵¹ *Id.*

¹⁵² JAMES ZOELICK, HUMAN CAPACITY BUILDING IN ENERGY EFFICIENCY AND RENEWABLE ENERGY SYSTEM MAINTENANCE FOR THE YUROK TRIBE 20 (July 2007), <https://energy.gov/sites/prod/files/2016/02/f30/yurok05final.pdf>. *Id.* at 3 (“Battery maintenance and vegetation management to keep photovoltaic modules from being shaded are key unmet maintenance needs.”).

¹⁵³ O’Neill Oct. 2, 2017 email, *supra* note 30.

¹⁵⁴ *Id.*

hour between 11 am and noon.¹⁵⁵ This is insufficient to power households or facilities with energy needs above a trickle charge.

“Currently, Yurok families without grid electrical power depend on a combination of expensive alternatives to electrify their homes. Some use solar and small hydro systems in tandem with generators, solar panels, propane, wood and kerosene. Virtually none of the families have power 24-hours a day.”¹⁵⁶ Stand-alone solar and micro-hydro power systems “do not produce enough electricity to run multiple appliances, like a stove, refrigerator, heater and lights simultaneously. Running a microwave or a washing machine and dryer, both high-energy consumptive devices, are simply out of the question.”¹⁵⁷

The micro-hydroelectric system on the Yurok Reservation prohibits the use of microwaves due to their quick power draw which can harm the system.¹⁵⁸ “Day-to-day tasks that many take for granted, such as cooking and refrigerating food, are exorbitantly more costly.”¹⁵⁹ Lack of reliable energy limits options for cooking in a place where there are no restaurants. A refrigerator or grocery store requires power 24 hours a day. Lack of reliable electricity fuels food insecurity, hunger, and poverty, particularly when the salmon run is at an all-time low due to drought and the consequences of upstream dams.¹⁶⁰

While serving as a CPUC Commissioner, I visited the home of the Tynor family on the Yurok Reservation in April 2014 to make a call from the newly installed telephone service built through a CPUC grant issued in 2004.¹⁶¹ During that visit Joe Tynor was in the midst of repairing a computer that sat on the counter, electronics exposed, after the micro-hydroelectricity system’s spiky power exceeded the voltage range for electric systems and blew out the

¹⁵⁵ Interview with Paul Romero, Information Services Director, Yurok Tribe, Sept. 22, 2016 (on file with author).

¹⁵⁶ YUROK TODAY, *Tribe Secures Electricity Funding*, *supra* note 131.

¹⁵⁷ *Id.*

¹⁵⁸ Sandoval, *Thanks for the Opportunity to Serve*, *supra* note 126, at 2.

¹⁵⁹ YUROK TODAY, *Tribe Secures Electricity Funding*, *supra* note 131.

¹⁶⁰ Lisa Morehouse, *Without Their Salmon, The Yurok Search For Meaning*, FOOD & ENVTL. REPORTING NETWORK (Oct. 15, 2017), <https://thefern.org/2017/10/without-salmon-yurok-search-meaning/> (“The river’s poor health and the low salmon run affect the entire Yurok culture and way of life . . . ‘When we can’t be in our river, can’t eat our fish, it kind of takes our purpose away. We have one of the highest suicide rates . . . and I think that’s directly correlated to our lack of salmon and our inability to continue our way of life,’ [Annelia] Hillman says.”)

¹⁶¹ CPUC Resolution T-16846 (June 9, 2004).

motherboard. “With the modern electric system extended to their house they are able to safely and reliably operate a computer, microwave, and a refrigerator,”¹⁶² I reported to the CPUC.

Micro or small-scale hydroelectric plants may also harm fish and the river ecology. The Yurok rely on salmon as a dietary staple and view fish as revered creations. Due to “critical declines of the Klamath River salmon populations, [the Yurok] Tribe is not interested in any hydro development that would impound or divert water on the mainstem of the river.”¹⁶³ Wind power in the area is “highly intermittent, best suited for sale to grid”¹⁶⁴ an energy consultant study concluded, if a grid were available.

The Yurok Tribe studied the feasibility of providing energy through a tribal utility. The Tribe concluded that lack of access to transmission resources made importing power economically infeasible.¹⁶⁵ Under CPUC Rule 15, distribution lines are transferred to utility ownership upon completion and energizing, and utilities earn a rate-of-return on those lines.¹⁶⁶ This rule creates incentives to construct “steel in the ground” investments such as distribution facilities to promote service to California residents, institutions, and businesses. Upon transfer the utility becomes responsible for line maintenance and operation.¹⁶⁷ Maintenance can include substantial costs and work to repair lines. The Tribe’s 2005 utility study recommended against forming a tribal utility in light of the costs of surveying an easement for each pole and line that would belong to a tribal utility, and line maintenance costs.¹⁶⁸

Electric grid construction, the Yurok concluded, would yield the best source of reliable power to meet tribal needs while reducing the GHG emissions and forestalling climate change. The Yurok Tribe with support from a U.S. EPA grant, studied the likely effects of climate

¹⁶² Sandoval, *Thanks for the Opportunity to Serve*, *supra* note 124, at 2.

¹⁶³ NOVA, ET AL., *supra* note 138, at 6.

¹⁶⁴ *Id.*

¹⁶⁵ JOLLEY & THE SCHATZ ENERGY RESOURCE CENTER, *supra* note 10, at 6.

¹⁶⁶ PG&E, Electric Rule 15 (June 20, 2008), Sheet 1, A (1)(b), https://www.pge.com/tariffs/tm2/pdf/ELEC_RULES_15.pdf.

¹⁶⁷ CPUC D. 07-07-019 (July 12, 2007) (“Once a line extension has been installed, its maintenance and replacement become the utility’s responsibility.”)

¹⁶⁸ JOLLEY & THE SCHATZ ENERGY RESOURCE CENTER, *supra* note 10, at 11.

change on the Reservation and Tribe.¹⁶⁹ Modeling revealed that sea level rise associated with climate change will inundate many Yurok Reservation residential areas and endanger cultural and natural resources, aquatic and terrestrial species, and associated habitats.¹⁷⁰

The Yurok Tribe wants safe, reliable, and sustainable electricity service at just and reasonable rates, the standard utility customers receive under California Public Utilities Code 451.¹⁷¹ California's utility-scale greenhouse gas reduction initiatives require 33% of electric grid power to be derived from renewable resources by 2020, and 50% renewable generation by 2030, and 100% by 2045.¹⁷² The Yurok determined that access to grid-scale power will reduce resort to black carbon sources such as diesel, wood, and kerosene. This strategy will improve the environment and health on the Yurok Reservation, and may lower household energy costs with the assistance of state energy efficiency and bill support programs.

Electric grid access is part of the Yurok Tribe's strategy to mitigate and adapt to climate change. The Yurok Tribe has two registered carbon offset projects to improve forest management that earn offset credits in California's carbon market.¹⁷³ Yurok Tribe climate change initiatives include "more efficient use of fossil fuels for electric generation, improving building insulation, and expanding forests and other 'sinks' to remove greater amounts of carbon dioxide from the atmosphere."¹⁷⁴

¹⁶⁹ KATHLEEN SLOAN & JOE HOSTLER, YUROK TRIBE AND CLIMATE CHANGE: AN INITIAL PRIORITIZATION PLAN, 24-27 (Sept. 2011),

<http://www.yuroktribe.org/departments/ytep/documents/YurokTribeandClimateChangePrioritizationPlan.pdf>.

¹⁷⁰ *Id.* at 25-27, 32.

¹⁷¹ *See e.g.*, Cal. Pub. Utils. Code 451 ("Every public utility shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities, including telephone facilities, as defined in Section 54.1 of the Civil Code, as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public.")

¹⁷² The Cal. Global Warming Sols. Act of 2006, Stats. 2006 Ch. 488 § 1 (AB 32) (effective Jan. 1, 2007); Exec. Order S-14-08 (Nov. 17, 2008), available at <http://gov.ca.gov/executive-order/11072/>; SBX1-2, 2011 Leg., Reg. Sess. (Cal. 2011), available at http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0001-0050/sbx1_2_bill_20110412_chaptered.html (requiring 33% renewable generation by 2020); Clean Energy and Pollution Reduction Act of 2015, S.B. 350, 2015-16 Leg., Reg. Sess. (Cal. 2015) (requiring 50% renewable generation on the electric grid by 2030).

¹⁷³ CARB, ARB OFFSET CREDIT ISSUED (Sept. 17, 2017),

https://www.arb.ca.gov/cc/capandtrade/offsets/issuance/arb_offset_credit_issuance_table.pdf; *Yurok Tribe, New Forests Register First Forestry Compliance Offset Project*, CAL. CARBON.INFO (Feb. 11, 2014),

<http://californiacarbon.info/yurok-tribe-registers-first-forestry-compliance-offset-project/>.

¹⁷⁴ SLOAN & HOSTLER, *supra* note 169.

4. Building the Electric Grid: Challenges Reverberate from the Past

The Yurok Tribe determined that building more than 50 miles of electric lines is the best means to provide reliable power to its reservation. The Tribe's federal recognition made it eligible for programs such as the federal Rural Utility Service (RUS) High Energy Cost Grants,¹⁷⁵ and provided resources for staff to oversee major projects such as electric construction. Since 2000 the Yurok Tribe has received over \$14.2 million from seven federal and state grants to construct electric lines on the reservation.¹⁷⁶ Completion of the electric line under construction in 2017 is slated for early fall 2018. New lines are in the early planning stage to serve households west of Weitchpec that lack electricity, and new houses planned to meet tribal housing needs.

The first project built in 2001 replaced poles in the town of Weitchpec at the Tribe's expense to make them suitable for both electric and telephone service.¹⁷⁷ Subsequent electricity extension projects used the Yurok Energy Trust as matching funds or to address unfunded needs such as upgrading inside wiring for homes necessary to receive electricity. The 2003 \$3.79 million RUS-funded project extended electric service to approximately 131 homes on the reservation.¹⁷⁸ The 2005 tribal utility study reported that "[a]pproximately 30 miles of 12.5kV power lines are currently being installed at a cost of roughly \$150,000 per mile."¹⁷⁹

Pursuant to PG&E's recommendation, the Yurok Tribe contracted with the Army Corps of Engineers to build the first line extension under the RUS grant. The Yurok Tribe experienced lengthy delays in PG&E approval to energize the line after construction. The line was energized in 2013 a decade after the grant was awarded.¹⁸⁰

¹⁷⁵ U.S. DEPT. OF AGRIC., RURAL DEV., HIGH ENERGY COST GRANT, <https://www.rd.usda.gov/programs-services/high-energy-cost-grants> (last visited Feb. 16, 2018).

¹⁷⁶ *O'Neill Aug. 12, 2017 email*, *supra* note 60.

¹⁷⁷ *Id.*; *O'Neill Oct. 2, 2017 email*, *supra* note 30.

¹⁷⁸ JOLLEY & THE SCHATZ ENERGY RESOURCE CENTER, *supra* note 10, at 7.

¹⁷⁹ *Id.* at 7.

¹⁸⁰ David Kligman, *PG&E Partners with Yurok Tribe to Provide Electricity in Remote Humboldt County*, CURRENTS, NEWS AND PERSPECTIVES FROM PACIFIC GAS AND ELECTRIC (July 15, 2013), <http://www.pgecurrents.com/2013/07/15/video-pge-partners-with-yurok-tribe-to-provide-electricity-in-remote-humboldt-county/>.

The Yurok received approximately \$5.7 million from the RUS in 2010 to build a 20-mile line to reach the Jack Norton Elementary School and the Yurok community of Wautec. The Yurok Energy Trust provided \$250,000 in matching funds. In 2017 the Yurok applied for and received from RUS another \$1.7 million grant for the Wautec line extension, a line the Yurok anticipate to complete and energize in coordination with PG&E in fall 2018.

In 2017, the Yurok received a \$100,000 grant from the U.S. Dept. of Housing and Urban Development to upgrade the inside wiring for some of the homes anticipated to be connected when the electric lines are built. “Most homes in the up-river areas of the reservation [west of Weitchpec] have substandard electrical wiring, lack electrical boxes and critical electrical infrastructure,”¹⁸¹ O’Neill noted. Updating wiring in advance of line completion ensures that homes will be ready to connect when the line is energized. CPUC Rule 15 provides the line developer, in this case the Yurok Tribe, a rebate for some line extension costs if customers take service within one year of the line’s energizing.¹⁸² The Yurok Tribe plans to use rebates for future electricity projects. Many Yurok houses were constructed before modern building codes. Homes that rely on wood for heating and cooking and use diesel for supplemental power may never have installed inside electric or telephone wiring, electrical boxes, or safety features, or may have wiring substantially below code for modern electric service. O’Neill reported that many Yurok homes lacking electric grid access “have extension cords that snake through their homes from outside generators. Without necessary electrical upgrades, PGE will not turn on power to their homes.”¹⁸³

Between 2001 and 2017, the Yurok Tribe spent \$1.75 million from the Yurok Energy Trust to support the development of electric lines and two solar projects. The Tribe received \$14.2 million from RUS during those sixteen years. HUD provided \$605,000 in 2007 for housing updates necessary to receive electric service, and \$100,000 in 2017 for the Yurok Indian

¹⁸¹ *O’Neill Aug. 12, 2017 email, supra* note 60; WINZER & KELLY, YUROK TRIBAL TELECOMMUNICATIONS & ELECTRIFICATION PROJECT 8, https://energy.gov/sites/prod/files/2016/01/f29/45_yurok_utility_brooks_sullivan.pdf (last visited Feb. 16, 2018) (“Homes that will be served will need to meet the Uniform Building Code (UBC) including 110/220 wiring and should be in standard condition.”).

¹⁸² See e.g., PG&E, Electric Rule 15, June 20, 2008, Sec. D (7), E, https://www.pge.com/tariffs/tm2/pdf/ELEC_RULES_15.pdf.

¹⁸³ *O’Neill Oct. 2, 2017 email, supra* note 30.

Housing Authority. The Yurok Tribe also secured support from the U.S. Department of Defense (DOD) Innovative Readiness Program to help build the power line in challenging zones off the main road and ready homes for power.¹⁸⁴ O'Neill commented "[w]e would have liked to continue using DOD, but they were deployed to the war, ironically to rebuild electrical lines in war torn areas of Iraq and Afghanistan."¹⁸⁵ She noted that "as the energy trust fund has been depleted, the Tribe no longer has the upfront funds to purchase necessary materials for DOD to construct electrical lines."¹⁸⁶

Tribal leadership in developing the electricity project facilitates respect for cultural resources and practices. The Yurok Planning Department works closely with the Tribe's Cultural Resources Department to protect cultural resources in the electric line design and construction. Part of the electric line to be completed in 2018 will be built underground to minimize disturbance of tribal cultural resources.¹⁸⁷ Planning Department member Eugene O'Rourke suggested adjusting the location of some undergrounding facilities to ensure they do not hinder traditional tribal dances.

While building continues for the line to Wautec, the Yurok Tribe has directed the planning department to assess who will remain without electricity after that line is energized. "Current estimates are that approximately 128 residences on, or adjoining the reservation, will still be without grid power after we complete the Wautec II power line project. Of that number, possibly 1/3 are tribal members," O'Neill reported.¹⁸⁸

The Yurok Tribe "has plans to build new homes up-river with Housing and Urban Development [Native American Housing Assistance] NAHASDA funds. These new homes will also require electrical power as will all future development."¹⁸⁹ The Yurok are California's largest tribe with over 6,000 members. Planning for adequate housing with safe and reliable

¹⁸⁴ O'Neill Aug. 12, 2017 email, *supra* note 60.

¹⁸⁵ *Id.*

¹⁸⁶ O'Neill Oct. 2, 2017 email, *supra* note 30.

¹⁸⁷ WINZER & KELLY, *supra* note 181.

¹⁸⁸ O'Neill Aug. 12, 2017 email, *supra* note 60.

¹⁸⁹ *Id.*

electricity is key to economic and educational opportunity, civic and democratic engagement, tribal, and environmental sustainability.

VII. Recommendations and Conclusion

Native Americans living on reservations merit safe and reliable electricity access at just and reasonable rates, the standard most Americans enjoy. The Yurok Tribe has long recognized that bringing electricity to its reservation will create new opportunities for economic advancement, improve health outcomes by reducing exposure to diesel and wood particulates, and open new avenues for education, health service, civic, and cultural participation. Closing the Native American reservation electricity gap is vital to tribal sustainability and self-determination, and will reduce black carbon and CO₂ emissions that contribute to global warming.

Research is needed to document reservation areas in California and around the United States that lack access to electricity. The CPUC has initiated a proceeding to identify disadvantaged communities with limited energy access to natural gas facilities in California's Central Valley pursuant to legislative direction.¹⁹⁰ The California Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350) directs the CPUC to adopt strategies to increase energy efficiency, solar, and electric vehicle access in communities identified as "disadvantaged." The CPUC should initiate a proceeding to analyze the Native American electricity access gap in California. In consultation with tribes the CPUC should develop strategies to address energy needs on California Native American reservations, consistent with state GHG and black carbon reduction policies.

The CPUC should conduct a proceeding to align electric line extension and service line policies in Rules 15 and 16 with state mandates to reduce black carbon and GHGs associated with energy and transportation, and increase zero-emissions vehicle access. This review must consider the needs of California Native American reservation areas that lack electricity access due to the affordability barriers CPUC rules create. CPUC electric and service line extension

¹⁹⁰ CPUC Decision D. 17-05-014 (implementing Cal. PU Code 783.5, AB 2672).

Rules 15 and 16 emphasize cost-recovery over universal service and were last amended in the mid-1990s prior to the environmental mandates for the energy and transportation sectors. These rules have been a barrier to electric access on California Native American reservations and for others not served by the Rural Electrification Administration including farm fields. California could reduce reliance on diesel generators, decrease GHG emissions, and speed achievement of SLCP reduction goals for black carbon emissions by reducing financial barriers to connecting to the electric grid.

The federal government should fully fund electricity access needs on Native American reservations to promote tribal health, education, welfare, and self-determination, and sustainable stewardship of tribal resources such as timber. Achievement of federal policies to improve the health and education of Native Americans to levels comparable to all Americans requires supporting access to electricity. Electricity investments will create new opportunities for forest, water, and other tribal resource management by enabling Internet-based monitoring and strategies to reduce black carbon and CO₂. Providing grid-electricity will enable resources necessary for modern education such as home use of computers and the Internet. Lighting could be switched to energy efficient LEDs [light emitting diodes] instead of kerosene lanterns which harm tribal health and produce black carbon and CO₂.

Grid-electricity access will enable Internet and communications buildout as they are interconnected infrastructures increasingly dependent on electricity. It will open new avenues for telemedicine, provide access to the Internet for health information, and put emergency services within a telephone's reach. Internet access will increase economic opportunities for businesses, jobs, and families, and enable new means to distribute and access information. Electricity access on reservations will enable tribal participation in the green economy including electric vehicles, which have lower operating fuel costs and diminish greenhouse gas emissions.

Supporting electric grid extension to Native American reservations is an important strategy to achieve state goals to reduce black carbon and GHGs in the energy and transportation sectors. The CPUC has used ratepayer funds to pay for pilot programs to expand electric vehicle

charging infrastructure and gather information about program results.¹⁹¹ Native American tribes and reservations should be included in state efforts to increase access to electric vehicles. Increasing electric grid access is a predicate to widespread transportation electrification as envisioned by California bill SB 350.

The CPUC should allow Energy Savings Assistance Program (ESAP) funds to be used for energy efficiency and weatherization upgrades for low-income reservation households slated to receive electric line extensions within one to three years. The CPUC should propose and enter into a consultative agreement with tribes to coordinate energy upgrades with inside wiring work needed to receive electricity when lines are energized. This initiative will prepare tribal households for electricity connections, foster energy and resource efficiency, and reduce the emission of black carbon and GHGs. Southern California Edison’s consultation and agreement with the Chemehuevi Indian Tribe near Lake Havasu, California, provides a good model for utility cooperation with tribes to facilitate energy efficiency services.¹⁹² The Chemehuevi Tribe, like the Yurok, are located far from energy efficiency contractors who work on ESAP-financed projects. Tribal-utility cooperation to align tribal and residential participation with contractor and energy efficiency resources and availability will speed deployment, improve ESAP participation, and increase program effectiveness.

Addressing electricity access gaps on Native American reservations requires more than money; it requires making electricity access on reservations a priority. Many tribes such as the Yurok do not have substantial financial resources from gaming and other businesses to fund electric grid expansion projects costing tens of millions of dollars.¹⁹³ The federal government, states, the private sector, philanthropy, and non-governmental organizations should support tribal efforts to procure safe, reliable, and sustainable energy access at just and reasonable rates.

¹⁹¹ CPUC D. 13-06-014 (June 27, 2013) (determining that “facility upgrade costs associated with electric vehicle chargers at residential sites would be treated as a common facility, rather than a cost paid by the individual customer. This treatment thereby shifts these costs to all residential ratepayers.”).

¹⁹² CPUC D. 16-11-022, at 316, *supra* note 139.

¹⁹³ *Michigan v. Bay Mills Indian Comty.*, 134 S. Ct. 2024, 2043 (2014) (Sotomayor J., concurring) (“not all Tribes are engaged in highly lucrative commercial activity . . . As of 2009, fewer than 20% of Indian gaming facilities accounted for roughly 70% of the revenues from such facilities.”).

Closing the electricity gap on Native American reservations is essential to reducing black carbon and GHG emissions, forestalling climate change, and achieving energy justice.