

JUST TRANSITION: NATIVE ENERGY SOVEREIGNTY THROUGH SOLAR ENERGY



Image Source: Covenant Solar Initiative, 2016

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Joey Giaramito

Just Transition: Native Energy Sovereignty Through Solar Energy

Executive Summary

As the global climate rapidly approaches 1.5 degrees Celsius above pre-industrial levels, an upsurge of urgency to decarbonize through renewable forms of energy to supplant fossil fuels as the dominant source of electricity has materialized in both the market and regulatory ecosystems of countries worldwide. While state and domestic level policy in the United States has shown significant intent towards the goal of electrifying its utility grid, this clean energy transition is still largely out of reach for low-income communities of color (Carolyn Ramírez, 2021). Native American and Indigenous held tribal land in particular holds over 5% of solar photovoltaic potential in the U.S., yet utilization of this naturally abundant resource is substantially unrealized, especially considering the historic dependence many of these tribes have on fossil fuels (Beshilas et al., n.d.). When developed, these clean energy projects rarely directly benefit the very indigenous communities whose land they occupy (Grosse & Mark, 2023).

Renewable energy, particularly solar PV has the potential to provide a stable, clean source of energy to tribal communities that disproportionately lack access to a reliable source of electricity while securing a robust pathway to lasting economic empowerment. To ensure this transition occurs in the right way, evidence has shown that Native communities must have a leading hand in owning the development and operation of these projects (Grosse & Mark, 2023).

The main inquiry for this research project was “what are the primary barriers faced by Native and Indigenous American communities operating in the existing U.S. regulatory structure to meaningfully develop solar energy on their sovereign territory?” To answer this question, traditional academic research utilizing a critical theory framework was used to review the current literature on the topic of Native American energy sovereignty and coupled with qualitative data gathered from three in-depth interviews with established Native leaders working both intra and intertribally to develop solar photovoltaic projects on tribal lands. Keywords pulled from recent research on the subject captured from both sources was analyzed using Nvivo software to develop three focused leadership recommendations that can be utilized by renewable energy practitioners seeking to develop impactful solar PV projects on tribal land.

Ultimately, in building upon the limited literature in Native-led solar energy development and synthesizing this with recommendations built upon insight from established Indigenous leaders with critically underrecognized lived experience championing energy sovereignty among North American tribes, the paper hopes to fill in gaps in knowledge by attempting to bridge theory and practice in the nascent but growing topic of native energy sovereignty.

What are key recommendations for practitioners operating in the current regulatory framework to secure tribal energy sovereignty?

Share wisdom and insight intertribally

Tribal communities face unique challenges in the process of developing solar projects on their sovereign territory that are often linked along common threads. Building bridges across tribal groups rather than simply within, along traditional indigenous conceptions of community can ensure knowledge is both cumulative and lasting. Tribes seeking to bring solar to their communities should look to fellow Native and Indigenous communities who have successfully developed solar projects, tribal renewable energy nonprofits, and other intertribal networks experienced in renewable energy to share wisdom, cultivate technical expertise, and build strong internal tribal solar capacity for future projects.

Align tribe-specific cultural practices and beliefs with the project development process

The development of solar energy projects on Native land for and by Native communities is not a one size fits all process and requires buy-in from all members of the community for which it will serve. Most importantly, these projects must have a deeper purpose that transcends simply providing a new energy source: they must provide a connection to and be closely aligned with both the unique cultural identity and long-term goals specific to that tribe to ensure they are environmentally and economically sustainable.

Cultivate trust and reconciliation

Nearly half a millennium of settler colonialism has left indelible generational wounds in the North American Tribal consciousness, significantly damaging the relationship between Native American communities and non-Native entities, namely regulatory bodies that govern renewable energy development nationwide. Non-Native stakeholders should look to Native leadership and expertise and seek to build reciprocal relationships of trust to heal the deeply rooted distrust built upon centuries of institutional marginalization in the process of developing Native renewable capacity.

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Introduction

An upsurge of urgency to decarbonize from the traditional fossil-fuel energy paradigm through renewables has materialized in the regulatory ecosystem of the United States in the past two decades. Coupled with rapidly decreasing prices in both the domestic global supply chain and policy-backed revenue support mechanisms, solar photovoltaic (PV) energy has grown to become the cheapest new source of energy worldwide (International Energy Agency, 2023). In spite of this, these new technologies are often still financially inaccessible to the most underserved populations, particularly rural communities of color, and their deployment fails to acknowledge the importance of the unique perspectives rooted in historical context and cultural identity (Levenda et al., 2021).

In the United States, Native and Indigenous communities in particular face levels of poverty and resultant reduced socioeconomic mobility at rates nearly double the national average (Administration for Native Americans, 2024). Often located in geographically dispersed rural communities, far from the reach of existing utility transmission lines, these tribal communities unsurprisingly also experience the highest rates of energy poverty of all groups in the U.S. (Scheier & Kittner, 2022).

While recent policy developments such as the Inflation Reduction Act both express intent on the part of the federal government to solve energy equity issues and show strong promise to begin remedying the most significant financial barriers to developing renewables by Native tribes, an overarching regulatory structure still rooted in settler-colonialist ideology continues to characterize the development of Native-led renewables (Raimi & Davicino, 2024).

Furthermore, while there's no question that rapid deployment of renewable technologies can theoretically benefit a tribal community, a reliance on purely technocentric methods can overlook critical cultural values that govern perception of energy and its use by that community (Necefer et al., 2015). The complex blend of social, structural and regulatory barriers faced by Native tribes necessitates a multidisciplinary approach that acknowledges the special characteristics inherent to these communities (Raimi & Davicino, 2024). Given the centuries of settler colonialism-informed policies and associated land dispossession, cultural erasure and resultant generational trauma experienced by Native communities in the United States, this new energy transition must ensure a meaningful pathway to tribal energy equity that considers tribes' unique cultural characteristics and historical context.

This study aims to provide an overview of existing barriers facing Native American and Indigenous peoples' ability to develop and own solar PV projects on their tribal land in the United States, with a focus on building tribal clean energy sovereignty through solar energy. Beyond discussing roadblocks, it highlights effective methods to ensure Native clean energy

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sovereignty, looking at history, recent policy, and insight from established tribal leadership dedicated to bringing a just energy transition to the greater U.S. tribal community.

Background and Historical Context

Given the centuries of colonization and associated land dispossession, resource exploitation, and resultant generational trauma that characterizes the current state of Native American communities in the United States, an historical overview is required to place the topic of tribal energy sovereignty and its urgency into appropriate context. The entrenched process of land dispossession, resource exploitation, cultural genocide, and replacement of indigenous communities with that of the settlers' as a necessary prerequisite to annexing this land is defined as settler colonialism, a process that began with the arrival of the first European explorers to the North American continent (Veracini, 2011). Settler colonialism differentiates itself from classic colonialism in prioritizing cultural removal and demographic replacement as preconditions for control of land and resources, establishing systems of power structured and perpetuated to maintain control of this newly claimed land (Wolfe, 2006). While diminished in its scope over the course of U.S. history, the fundamental underpinnings of this system remain imbedded in inconsistent and often poorly enforced federal policy, a legacy of institutional mistreatment embodied in 'federal paternalism' and neglect that lays the groundwork for the existing barriers to tribal energy sovereignty (Maruca, 2018).

According to the U.S. Census Bureau, one in three people in the Native American and Alaskan Native population lives in poverty, double the rate of the general U.S. population, with 36% of families living on reservations facing poverty relative to 9.2% of U.S. families (Administration for Native Americans, 2024). Moreover, unemployment rates among indigenous populations at large was recorded at 7.9% in 2023, peaking to as high as 28.6% during the COVID pandemic, again more than double than that of the general population at 3.9% (U.S. Bureau of Labor Statistics, 2022).

Stable access to electricity is commonly understood as an inherent necessity to modern life in the 21st century, and a prerequisite condition for any community to be considered livable (United Nations, 2024). Native American households are on average significantly more likely to lack access to electricity, with an estimated 14% of households of Native American Reservations lacking access to this amenity as recently as the year 2000 (Energy Information Administration, 2000). Moreover, electricity rates are as much as 50% higher in some Native communities relative to the general U.S. population, forcing these communities to pay a significantly higher portion of their income to supply their basic electricity needs (Energy Information Administration, 2000). As a result, Native Americans face the highest degree of energy poverty across all demographics in the U.S. (Scheier & Kittner, 2022). Roughly 32% of homes within the Navajo Nation, the largest reservation and tribal community in the United States lack access to

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basic electricity, an estimated 34,000 enrolled members, all in spite of being one of the largest Native producers of energy in the country (Begay, 2018).

Further complicating the transition to renewables on Native lands is the historic reliance many tribes throughout the Western United States have had on fossil-fuel based energy production (Raimi & Davicino, 2024). The Navajo Nation, the largest federally-recognized tribal nation in the United States has extracted and sold coal on their land since the early 1960s, supplying a steady revenue source and employment opportunities to tribal members (NTEC, 2024). In the view of the Navajo Tribal Council, the continued development of these resources by and for the tribe's long-term development is a vital means by which to achieve tribal energy sovereignty, even in spite of these resources fundamental incompatibility with cultural values and environmental impacts (Necefer et al., 2015). Indeed, amid the context of low economic opportunity present in many Native American communities, these carbon-based energy resources have over time become the most significant source of tribal revenue for some fossil-fuel extracting tribal nations, creating a perverse dependency on an energy source that has in turn led to poor health conditions for these very communities (Royster, 2012).

Members of the Shiprock Navajo community living within the vicinity of the two coal-burning power plants in their community were found to have significant rates of respiratory conditions such as asthma, and Native community at large suffer from respiratory morbidity at disproportionately higher rates than the rest of the U.S. population (Bunnell et al., 2010). In contrast to fossil fuels, renewable energy is often perceived by Native communities as a pathway to circumvent the serious health effects inherent in the extraction and production of carbon-based energy such as coal. According to a study conducted to highlight core values about energy among the Navajo Nation, 100% of participants cited a concern for potential energy resource impacts to health, with 75% finding the development of renewables favorable to fossil fuels in their capacity to reduce harm (Necefer et al., 2015).

Finally, while many energy producing tribes have grown dependent on revenues generated from extraction and or production of fossil fuels, due to the third-party lease-based nature in which non-Native interests are frequently the extractors of carbon-based resources on Native land, tribal communities are rarely the primary beneficiaries of the resource extraction process (Royster, 2012). Coupled with the price volatility of fossil fuels, and the fact that these resources must be physically extracted and refined relative to renewables, whose energy is sold at the point of generation, a transition to producing clean energy such as solar has the potential to secure greater tribal autonomy over these resources alongside localized benefits to the tribe (Ravotti, 2017).

Outside of the early settler-colonialist driven policies that define the many disparities in quality of life and resultant ability to wield their right to self-determination, several federal policies

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foundational to these ongoing struggles are worth highlighting. Amid the New Deal, Congress passed the Indian Reorganization Act in 1934 seeking to bolster tribal self-determination in restoring rights to manage their land and mineral resources by requiring non-Native natural resource interests to obtain tribal consent before extracting resources on tribal land. While partially successful in ending land allotments and providing a structure for tribal self-rule, the DOI ultimately had final say over terms of these leases, resulting in undervalued contracts and long-term environmental damage on tribal land that reinforced an overarching legacy of federal paternalism characterizing later policy (Brookshire & Kaza, 2013). Two years later, 1936 Rural Electrification Act was passed with the intent of electrifying the many remote communities living beyond the reach of existing transmission lines, succeeding in connecting the numerous, majority white descendants of homesteaders while leaving similarly rural Native communities out of this expansion (Begay, 2018).

The 1970's and Nixon Administration brought with it sweeping changes to that served to strengthen and build upon the legal precedent of federal tribal sovereignty with the Indian Self Determination and Education Assistance Act of 1975, in which Congress granted tribal governments the autonomy to self-administer services previously provided by the U.S. Department of Interior's Bureau of Indian Affairs (Maruca, 2018). The Nixon era marked a major turning point in federal policy towards tribes that has persisted in the years since, shifting from an excessively paternalistic approach to one which has granted greater autonomy to tribal governments, representing an honest commitment by the federal government to fulfill its trust responsibility to tribes (Maruca, 2018).

The passage of the Energy Policy Act of 2005 brought with it the first major provisions focused on the development of renewable energy on tribal lands with the creation of the Indian Tribal Energy Development and Self-Determination Act (ITEDSDA) alongside two new tribal-facing offices to facilitate this development within the Department of Energy and Department of Interior (Grosse & Mark, 2023). Created with the intent of granting sovereign tribes a greater degree of authority over energy resources on their territories, the ITEDSDA allows tribal governments to enter into energy leases, grant rights-of-way for utility transmission, and conduct their own business with regard to energy resources on their territory, bypassing the lengthy DOI approval that was once required for individual energy development projects (Brookshire & Kaza, 2013). To be granted this ability, tribes must enter into initial Tribal Energy Resource Agreements (TERAs) with the Department of Interior, requiring a lengthy and costly review process. While several amendments were made to the ITEDSDA, including a provision which grants further tribal autonomy through creation of Tribal Energy Development Organizations (TEDOs), tribally-owned business organizations with agency to negotiate their own energy business without DOI approval, no tribes have managed to create one until 2022 (Raimi & Davicino, 2024).

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Defining Tribal Energy Sovereignty

The concept of energy sovereignty is a relatively new idea that concerns itself with the ability of a group to achieve self-determination with respect to the ownership and production of energy resources and can be seen as an end goal in the more broadly defined agenda of energy justice. Defined, “energy sovereignty is a framework that recognizes the individual, community, or nation’s rights, and strengthens their abilities to exercise choice within all components of energy systems, including sources, means of harnessing, and uses, in order to satisfy their needs for energy” (Gonzalez, 2015). Tribal sovereignty on the other hand is defined as the legal right of Native American tribal communities to self-determination in all matters related to their political status as recognized sovereign nations, and is dependent on this official recognition by the federal government, a status enshrined in the U.S. Constitution through legal precedent (National Conference of State Legislatures, 2024). As sovereign nations, tribal nations are thus granted the legal right to make decisions about issues relevant to their well-being such as energy development, but must operate within an existing regulatory environment that is largely unfriendly to the special characteristics that define tribal communities, consequently weakening their ability to exercise energy sovereignty (Raimi & Davicino, 2024). Amid a context of ongoing climate change, the associated energy transition and the array of contemporary issues tribal nations disproportionately face relative to the rest of the U.S. population, tribal clean energy sovereignty is an urgently needed sustainable economic pathway that is consistent with Native values, aligned with environmental and energy justice, and theoretically supported by the existing legal precedent of tribal sovereignty, but faces a complex array of barriers to being reached (Grosse & Mark, 2023).

Literature Review - Barriers to Solar Energy Development on Native Lands

Sociocultural

History of Distrust

Over the course of U.S. history, the breaking of treaties drawn between the nascent United States government and North American Tribal nations is mirrored in continuity of disparities in the enforcement of legislation designed to empower tribal sovereignty, further alienating the tribal communities whose right to self-determination they are legally entrusted with. Indeed, from 1777 until the U.S. Congress formally ended its primary policy of dealing with tribal nations in the landmark Indian Appropriations Act of 1871, the United States has broken, reinterpreted, or nullified nearly all of the over 400 treaties meant to be binding agreements negotiated with tribes (Gale Courey Toensing, 2011). In the years following, the federal government’s relations with tribes were primarily carried out through executive order, subject to the revolving ideologies and interests of the executive branch in power, free to act without the formal tribal consent that treaties granted (Helfrich et al., 2021).

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Key to understanding the potential of tribal clean energy sovereignty is an understanding of the concept of federal Indian trust responsibility, the chief legal principle that has come to define the relationship between the U.S. federal government and tribes and serves as the foundation of U.S. Tribal law (U.S. Department of the Interior: Indian Affairs, 2024). First established in a series of three court cases known as the ‘Marshall Trilogy’ in the 1830’s and refined in case law (most notably the 1942 *Seminole Nation v. United States* decision), tribes are guaranteed status as sovereign nations, with the U.S. federal government entrusted with the responsibility to uphold these tribal nation’s right to self-determination (U.S. Department of the Interior: Indian Affairs, 2024). A more recent refinement of this federal trust responsibility that holds relevance to tribal energy development came in the year 2000 with Executive Order 13175, establishing the tribal right to consultation (House, 2022). While requiring all federal agencies to conduct regular consultation with tribal nations in all matters affecting or occurring on tribal land, this guarantee of consultation has often fallen short in its ability to uphold tribal sovereignty for a number of reasons, representing a major deficiency in the overarching guarantee of federal trust responsibility (Susskind et al., 2022).

The ultimate result of these numerous breaches of trust and outright exploitation following a history of subjection to racist policies has led many tribal nations to be rightfully distrustful when presented with opportunities to develop projects in their territory by Non-Native outsiders, most especially the federal agencies entrusted with guaranteeing their right to self-determination (Dreveskracht, 2012).

Cultural Alignment

The highly technocentric approach to energy development projects on Native land often fails to consider critical values that directly inform perception and acceptance of these technologies among Native communities (Necefer et al., 2015). In contrast to fossil fuels, renewable energy and solar in particular shows strong promise in its cultural compatibility with traditional Native values and belief systems, and have the potential to protect tribal cultural resources when their development is aligned with and empowered by tenants of tribal sovereignty (Kronk Warner, 2020).

Traditional Western conceptions of energy prioritize its role as a functional, linear “means to an end” tied to the idea of productive use and continuous growth, a legacy of extractive capitalist ideology inseparable from its settler-colonialist origins yet often viewed independent of a cultural belief system (Linthicum et al., 2021). In contrast, Native communities such as the Navajo hold strong values that tie conceptions of cultural identity directly to concern for protection of the water and land (environment), from which all energy flows cyclically. These include reciprocal relationships with the natural world, an emphasis on intergenerational sustainability, and an overarching sentiment of interconnectedness with the surrounding

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environment that connects naturally to concerns for human health impacts (Necefer et al., 2015). A carbon-free energy source that can be deployed at scales ranging from smaller distributed or off-grid arrays to power plant-sized developments, solar PV exists as a passively harnessed form of energy generation whose resultant low impact on human health and the environment relative to fossil fuels reveals significant cultural alignment potential for tribes with a strong concern for preserving landscapes they hold sacred (Necefer et al., 2015).

While traditional forms of energy development on Native land have had an historic reputation of causing damage to their cultural and environmental resources, it's important to note that while representing a promising pathway to energy and economic sovereignty, renewable energy is neither an implicitly accepted source of energy generation among Native communities, nor a core tenant of their foundational value systems (Grosse & Mark, 2023). For renewable energy developments such as solar to work for tribes, these communities must leverage their sovereign right to develop their own projects and in turn fundamentally redefine the concept of development at large in a way that aligns with their cultural values (Dreveskracht, 2012).

Structural

Land Dispossession

The historic dispossession of the majority of their land through European colonization and forced migration by the U.S. federal government has subjected Native American communities to face entrenched socioeconomic disparities, territorial sovereignty and natural resource disputes, and increased climate vulnerability to an extent that is difficult to quantify (Farrell et al., 2021). Since the onset of settler colonialism, Native communities have lost approximately 98.2% of their original territory, with tribes retaining only 2.6% of their original land area and approximately 42.1% of tribes retaining no federally or state-recognized lands at all (Farrell et al., 2021). While much of this land was ceded forcefully in the process of early settler colonialism via violent dispossession and legally mandated genocide, (e.g. Indian Removal Act of 1830 and subsequent Trail of Tears), the first legal precedent prescribing specific terms to the reallocation of Native lands came in the Dawes Act of 1887.

Following in the footsteps of the 1851 Indian Appropriations Act and 1862 Homestead Act, which effectively erased large swaths of Native-held treaty land in favor of white American western expansion and the racist reservation system, the Dawes or General Allotment Act of 1887 carved up these Native reservations into 160-acre parcels of land, allotting them to Native Americans in exchange for U.S. citizenship (National Park Service, 2024). Once allotments were claimed, the leftover "surplus" land was sold to non-Native settlers, with many new Native land owners being driven to sell their allotments due to inability to pay land taxes (Grosse & Mark, 2023). All told, the Dawes Act stripped away approximately 90 million acres of land formerly

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held collectively by tribes, resulting in a legacy of “checkerboarding” of Native land between individual owners that continues to complicate efforts to develop renewable energy projects (Raimi & Davicino, 2024).

While smaller scale solar projects such as residential or distributed solar PV consisting of localized arrays of low kW sizes can be sited with minimal impact on land, larger utility scale solar projects measured in the megawatts (MW) require significantly more land area to accommodate the quantity panels required to reach their associated power output (Beshilas et al., n.d.). Given the legacy of checkerboarded land allotments, large utility-scale solar projects often run into additional regulatory barriers related to land jurisdiction considerations, including delayed project siting, ancillary oversight requirements, and complex transmission approval processes owing to the various regulatory structures that these fragmented jurisdictions may utilize (Beshilas et al., n.d.). All told, the historic state-sanctioned dispossession and partitioning of Native land has both severely stripped these sovereign nations of available acreage to develop an often land intensive energy resource and given rise to significant regulatory barriers that have come as a result of checkerboarded allotments.

Socioeconomic Mobility

The high upfront capital required to fund renewable energy projects remains the most conspicuous and onerous barrier Tribal communities face in their efforts to gain energy sovereignty, and is often too steep in price for tribes to independently finance (Zimmerman & Reames, 2021). According to a previous study surveying tribal communities in relation to constraints to energy resource development on their land, 83% of respondents stated “Lack of funding” as a critical roadblock, which frequently forces tribes to look elsewhere to fund clean energy projects (Brookshire & Kaza, 2013). As previously described, the large disparity in economic mobility and performance found in many Native communities relative to the rest of the U.S. population has been shown to give rise to the multitude of other key socioeconomic metrics these communities continue to struggle in (Duffy & Stubben, 1998). Moreover, beyond the cost of its initial inputs in the solar pre-development phase, the combined sum of ancillary fees required to perform mandatory siting, upgrade neglected electrical infrastructure, and interconnect these new energy developments to the wider transmission grid can reach the tens of millions of dollars, prohibiting many tribal communities from realizing the benefits of a potential solar PV project (Willson, 2022). Tribal ownership and control of energy production is already a proven way for these communities to generate a steady source of revenue as seen in the historic production of fossil fuel among certain tribal nations such as the Navajo and Ute Nations of the Southwestern United States (Raimi & Davicino, 2024). According to the Harvard Project on American Indian Economic Development, successful economic outcomes in tribal development programs are incumbent upon the centering of Native cultural values, the

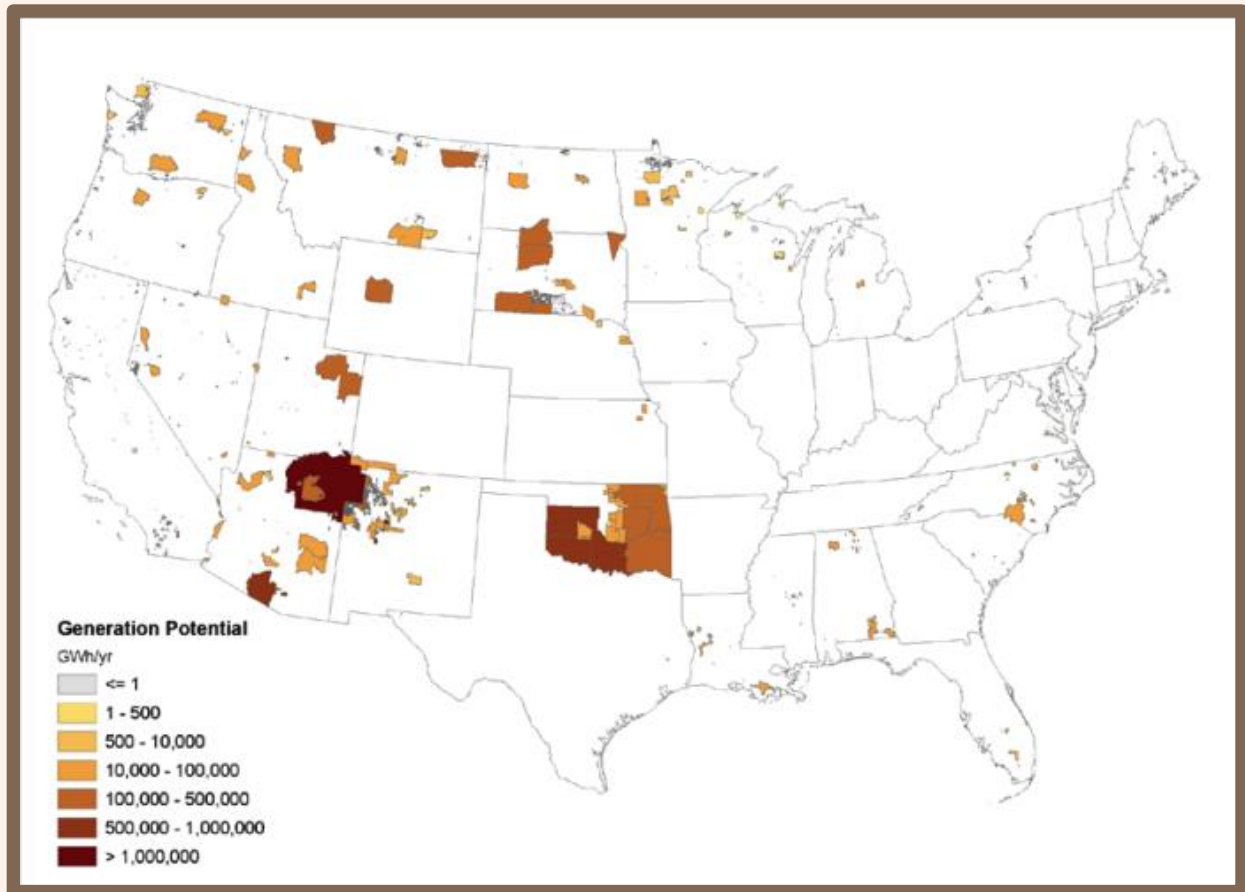
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reinforcement of tribal institutions, and the capacity to exert self-determination, all of which can be fulfilled through the development of solar energy projects (Maruca, 2018). While not a guarantee, the development of solar energy by and for tribal nations has vast potential to both alleviate existing socioeconomic pressure these communities face while concurrently providing access to a secure supply of affordable clean energy, a pathway to much needed energy justice (Grosse & Mark, 2023).

Regulatory

Complexity of Regulatory Landscape

According to the National Renewable Energy Lab, although making up only 2% of the total landmass of the United States, Native held land holds over 5% of total technical potential of solar photovoltaic energy in the country, representing roughly 17,600 billion kWh a year of electricity production potential and approximately 3.7 times the total U.S. electricity consumption in 2022 (Beshilas et al., n.d.; Energy Information Administration, 2024). Despite this vast availability of photovoltaic resources, their potential, the overarching importance of energy production to tribes, and their increasing interest in developing clean energy projects aligned with their cultural traditions, very few Native communities have yet to take full advantage of solar PV to the extent they theoretically should be able to, with scant few large-scale renewable energy projects developed in tribal lands to date (Warner, 2013). When funding is in place, tribes face a dizzying array of barriers wrought by the current energy regulatory structure that create complex challenges for tribes seeking to achieve energy sovereignty through solar energy development.



Photovoltaic Generation Potential by Reservation

Source: [Techno-Economic Renewable Energy Potential on Tribal Lands \(NREL, 2023\)](#)

One of the chief regulatory issues tribes face relates to the failure of the federal government to honor its trust responsibility to tribes. Over the past several decades of successive case law and policy such as the National Historic Preservation Act, the definition of tribal sovereignty has evolved to incorporate a requirement of ‘prior consultation’ of Native nations on the part of federal agencies in decisions related to development on Native land (Grosse & Mark, 2023). While mandated by law, these requirements have often fallen short in being consistently enforced, with many agencies perceived as viewing prior consultation as a “check the box” requirement rather than a meaningful attempt to engage in consensus with Native communities, leading to disputes over development projects (Lee et al., 2023). Lastly, federal agencies tasked with overseeing matters directly related to tribal energy development, their role as neutral arbiters and trustees of tribal sovereignty, often suffer from internal issues that can further delay deployment of tribal solar projects and limit exercise of tribal energy sovereignty. Mismanagement in the form of erroneous record keeping, understaffing, and subpar coordination with relevant federal agencies key to tribal energy development by the

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Bureau of Indian Affairs has manifested in significant permitting setbacks and administrative delays that underpin the federal government's poor stewardship of tribal sovereignty (Dreveskracht, 2012).

Furthermore, the energy development process of utility-scale solar projects requires not only larger tracts of land upon which to be developed, spurring land jurisdiction issues described in the previous section, but must satisfy significant siting, permitting, interconnection and transmission requirements that are often as costly as they are time consuming (Zimmerman & Reames, 2021). The capacity to generate a new source of energy begets the need for a means by which to transmit this energy to and across population centers. Located largely in rural areas, far from the reach of existing utility transmission infrastructure, tribal communities face disproportionate rates of infrastructure inaccess that only serves to amplify the ongoing Native energy poverty crisis (Begay, 2018). In large part due to their remoteness from this infrastructure, the cost to transmit energy can be prohibitive to development: According to the Navajo Tribal Utility Authority, the average cost to connect an unelectrified home to distribution lines is as much as \$40,000 (Tanana & Bowman, 2021). Beyond the cost of transmission, fees associated with the interconnection process can also derail implementation of renewable energy projects, with the Oceti Sakowin Power Authority forced to cease development of their two planned wind farms in 2015 after facing \$48 million in interconnection costs (Willson, 2022). Finally, the average wait time for a new utility scale solar project to make it through existing interconnection queues is approximately five to seven years, long enough to force many Native solar efforts to drop out of the queue and abandon projects entirely (Willson, 2022).

Numerous policies designed by the federal and state governments to incentivize the deployment of solar and renewables have significantly transformed the economics of developing these projects for non-Native entities while leaving tribal communities behind due to lack of access. These include measures that can serve to offset the expensive upfront capital required to develop solar projects such as net metering arrangements, federal and state tax incentives, and third-party ownership models such as power purchase agreements (PPAs) (Beshilas et al., n.d.). Net-metering rules that allow grid-tied renewable energy producers to sell their excess generated energy back to the utility are set by state-level energy regulatory policy, barring access to this potential compensation to tribes located in utility territories unfavorable to net metering (Necefer et al., 2015). Similarly, rules surrounding third-party PPAs are subject to state law and variances in individual utility interpretation, leading to legal uncertainty that prevents PPAs from being an option open to tribes in these states (Necefer et al., 2015). Finally, until the recent passage of the Inflation Reduction Act in 2022, tax-exempt tribal communities were sidelined from accessing the Investment Tax Credit for solar, a policy considered the most significant driver of solar PV's growth in the U.S. since its inception with the 2005 Energy Policy Act (*Solar Investment Tax Credit (ITC) | SEIA, 2024*).

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Additionally, rights-of-way (ROW) often play a major role in the tribal energy development process by empowering tribes the ability to issue leases to their land for purposes of energy development and transmission by non-Native entities, through which nearly all utility-scale solar developments on tribal land have occurred thus far (Maruca, 2018). While the Department of Interior plays a critical role in ultimately approving whether rights-of-ways are granted for renewable energy projects, this process is often confounded by land jurisdiction issues stemming from the legacy of “checkerboarding” of once collectively held Native land among an intricate mosaic of Native and non-Native landowners (Kronk Warner, 2020).

Finally, policies designed with the intent of bolstering tribal energy sovereignty can oftentimes limit its exercise due to a preponderance of bureaucratic complexity. The process of securing Tribal Energy Resource Agreements, a policy mechanism within the Energy Policy Act of 2005 to enhance tribal self-determination in energy development involves meeting stringent criteria, including time-consuming siting and leasing processes, costly environmental impact reviews open to public comment, and the assumption of all liabilities once held by the DOI if granted, all serving to dissuade tribes from pursuing TERAs (Maruca, 2018).

In 2012, Congress passed the Helping Expedite and Advance Responsible Tribal Homeownership (HEARTH) Act, an amendment to the ITEDSDA granting tribal nations the ability to bypass DOI approval to leases of their land for energy development by third-parties and a direction often undertaken by tribal governments developing renewables due to the difficulties involved in securing TERAs (Grosse & Mark, 2023). To date, approximately 20 tribes have pursued development of renewable energy projects through this avenue, which grants tribal lessors revenue through royalty payments but limits the potential of self-driven economic development that could be gained from direct ownership of these projects (Maruca, 2018).

Lack of Tribal Representation and Participation

Tribal communities frequently find themselves left out of the key decision-making processes that govern their capacity to finance and develop renewable energy projects, resulting in a lack of direct representation and resultant frustration that impedes their ability to develop solar projects in a way that best suits their needs (Beshilas et al., n.d.). Given the vast complexity of the existing energy regulatory framework in which they must operate to develop these projects coupled with existing socio-political conditions that serve to discourage tribal political engagement, Native communities face an uphill battle to get energy projects developed, even when the economics are in place. Further contributing to this is political presence: Relative to all other ethnic groups in the United States, Native Americans have among the lowest levels of political participation and associated representation in the political sphere, a metric explained by the confluence of historical disenfranchisement from the political process, a widely dispersed population, unique voting patterns that primarily follow tribal concerns, and the underlying

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socioeconomic conditions of Native people in the U.S. (Huyser et al., 2017). Most importantly, the U.S. legal mandate of federal trust responsibility guarantees tribal nations a ‘right to consultation’ as sovereign entities for all matters affecting these tribes, yet studies have shown that this is often inconsistently honored or entirely unenforced by the federal government (Susskind et al., 2022). Despite these deeply imbedded barriers, several promising developments have arisen in the last decade to strengthen the institutional, socioeconomic, and regulatory capacity of tribal communities. These initiatives are driven primarily by a synergy of increased federal policy focus towards tribes and Native-led organizations blazing the trail towards tribal energy sovereignty.

Primary Drivers of Solar Energy Development on Native Lands

Intertribal Collaboration

While each Tribal community faces challenges unique to their geography, cultural practices and history, these challenges are often shared intertribally. To this end, the development of both formal and informal intertribal networks to share knowledge and best practices has served to bolster institutional capacity among these communities, assisting tribes writ large in reaching energy sovereignty (Raimi & Davicino, 2024). These Native-led organizations, including non-profits, tribal coalitions and private companies have arisen to fill in the gaps in attention to Native energy issues by existing energy regulatory structures, and are further strengthened by intertribal events held nationwide (Grosse & Mark, 2023). Native organizations of note include, but are not limited to Red Cloud Renewable, Native Sun Community Power Development, Indigenized Energy, Alliance for Tribal Clean Energy, Native Renewables, and GRID Alternatives Tribal Program. These organizations provide vital support to tribes seeking to develop solar and renewable energy in various ways, including capacity building, technical and financial assistance, workforce development, community outreach, and education, embodying the full spectrum of resources sorely needed by tribes to meaningfully achieve tribal energy sovereignty for their respective communities.

Additionally, the intertribal non-profit known as the Midwest Tribal Energy Resource Association (MTERA) was founded in 2014 with the goal of leveraging collective knowledge and expertise in clean energy development to advance tribal energy sovereignty. A regional coalition of 26 Midwestern Tribes, MTERA provides technical resources, information and project development support to empower its member tribal governments, with a focus on respecting the unique cultural qualities of each tribe (MTERA, 2024).

In 2023, Alliance for Tribal Clean Energy hosted its inaugural Tribal Energy Equity Summit, assembling diverse leadership drawn from national tribal nations, the federal government, and tribal-aligned organizations to collaborate on key issues affecting energy development on Native

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lands. The Summit was reconvened in 2024, fostering dialogue on topics ranging from utility interconnection expertise to workshops on accessing federal loans, and represents a strong example of a Native-led coalition holding the federal government to account for ensuring its trust responsibility to fully-realized tribal energy sovereignty (*Tribal Energy Equity Summit 2024*, n.d.).

On the regulatory side, the U.S. Department of Energy's Office of Indian Energy Policy and Program in partnership with the Office of Indian Energy has convened its bi-annual Tribal Clean Energy Summit since 2011. The event brings together tribal community leaders and related stakeholders to collaboratively share ideas and information in the goal of advancing tribal-wide energy infrastructure development, and constitutes a promising public forum through which Native energy sovereignty can be elevated as a domestic policy issue (U.S. Department of Energy, n.d.).

Recent Policy Developments

Although the federal government's policy portfolio has historically placed Native energy and environmental concerns as a low priority, recent legislative developments in the last four years under the Biden Administration have shifted close attention to tribal equity and environmental justice at large, symbolizing a concerted effort on the part of the federal government to honor its legal commitments to tribes (House, 2023). Given the historic precedence of these recent policies and their potential to remedy the significant economic barriers impeding tribal clean energy sovereignty, a semi-exhaustive list of these initiatives is warranted.

In the executive branch, the Biden Administration has made environmental justice and tribal sovereignty major policy priorities with his Justice40 initiative, setting a target goal of at least 40% of all benefits of federal climate and energy investments to be accessible to disadvantaged and underserved communities, including Native tribes (*Justice40 Initiative | Environmental Justice*, n.d.). Supporting this is the Presidential Budget, which currently allocates \$4.7 billion to the Department of the Interior's existing tribal programs, \$4.5 billion in clean energy infrastructure investments to advance tribal renewable energy workforce development (\$83 million towards electrifying tribal households), \$150 million in support of tribal climate resilience initiatives, and \$20 million towards outreach and technical support efforts, all designed to elevate tribal communities' capacity to combat climate change (House, 2023).

In 2021, Congress and the Biden administration successfully passed the Bipartisan Infrastructure Investment and Jobs Act, an historic authorization of more than \$1 trillion U.S. dollars in funding towards solutions for critical infrastructure development with climate resilience in mind, with \$13 billion allocated to support tribal nations (The White House, 2023). This was closely followed by the landmark Inflation Reduction Act in 2022, providing \$720 million in funding to

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support tribal communities in achieving environmental justice goals. Combined, these two pieces of legislation not only represent the largest investments in climate resilience and energy infrastructure in U.S. history, but constitute a concerted shift in federal policy towards tribal clean energy sovereignty (House, 2023).

The Inflation Reduction Act's provisions for Native communities specifically targets tribal energy justice concerns by focusing on financial barriers, arguably the most significant material barriers to tribal energy sovereignty (Grosse & Mark, 2023). This is enabled by \$720 million in direct funding towards Native and Indigenous communities, spread across the Department of Energy and Department of the Interior. Most notably, the IRA rewrites the federal tax code through Internal Revenue Code Section 6417, allowing tribal entities historically exempt from federal income tax to access renewable energy development tax credits in the form of direct payments. (*Tribal Provisions in the Inflation Reduction Act Address Energy, Climate Change | Insights | Holland & Knight*, n.d.). Considered one of the most important solar energy policy mechanisms implemented by the U.S. federal government since its inception and responsible for much of the growth of the domestic solar in the last two decades, the Solar Investment Tax Credit is now finally accessible to tribal communities (*Solar Investment Tax Credit (ITC) | SEIA*, 2024). In allowing tribes to recoup the steep upfront costs of developing these projects and offering a more accessible funding alternative to competitive grants or leases, this new IRA provision creates a key driver to tribal renewable energy development by structurally altering the economics of solar energy projects for these communities (Oxendine, 2022).

The U.S. Department of Energy's Tribal Energy Loan Guarantee Program (TELGP), which was established in the 2005 Energy Policy Act to provide much needed financial support to Native communities seeking to fund development of energy infrastructure projects received a tenfold increase in loan authority under the IRA, increasing from \$2 billion to \$20 billion (The White House, 2023). To assist in program administration, the IRA also allocated \$75 million to the DOE TELGP, and increasing loan guarantees to 100% for tribal lessees (*A Summary of Inflation Reduction Act for Tribal Governments*, 2022).

The IRA also authorized \$6.6 billion in funding to the U.S. Department of Interior, with \$145.5 million of these funds directed to the DOI's Department of Indian Affairs dedicated to accelerating its Tribal Electrification Program (TEP). The TEP's intent is to fund the electrification of households in tribal communities with zero-emission energy projects and is designed to provide both technical and financial assistance in meeting this goal. In March 2024, the first round of funding successfully awarded \$72 million to 21 different tribes in their efforts to develop clean energy projects (The White House, 2023).

In March of 2022, the Department of the Interior's Office for the Assistant Secretary for Indian Affairs announced approval of the creation of the first ever Tribal Energy Development Organization by the Red Lake Band of Chippewa Indians, the first of its kind in the 17 years since

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the Energy Policy Act enabled their creation in 2005 (The White House, 2023). The best practices learned navigating the complex TEDO process by the Chippewa could serve as a useful example, paving the path for other tribal communities seeking to exercise their right to energy self-determination originally intended with the passage of the ITEDSDA.

Research Methods

The identification and selection of relevant tribal leadership and key research directly related to the topic of tribal clean energy sovereignty was critical to answering this paper main inquiry: “What are the primary barriers faced by Native and Indigenous American communities operating in the context of the existing U.S. regulatory structure in their goal of developing solar energy on their sovereign territory?” To this end, two sub questions emerge:

- What are the most encountered structural, social or regulatory barriers faced by Native communities in the development of solar energy projects on tribal land?
- What are key leadership recommendations missing from current literature on tribal energy sovereignty that can be revealed through insight drawn from Native clean energy expertise?

Approach

The research conducted to answer these inquiries draws primarily from traditional academic research methods and has been structured in part using the critical theory interpretive framework to understand how historic power structures and their associated ideological paradigms have led to the conditions that gave rise to the topic. Qualitative, descriptive, and applied research meant to present and analyze the subject matter to form actionable recommendations for practitioners in solar energy and tribal sovereignty spaces was conducted alongside the case study research tradition.

Researcher Positionality

It should be acknowledged that the writer is a non-Native settler of mixed European and Asian immigrant descent who conducted this research primarily from his home on unceded Lenapehoking territory, now the state of New York. He first became aware of the tribal energy topic while working at an energy justice non-profit on Luiseño territory alongside members of the La Jolla Band of Luiseño Indians many years prior to this study, and as a renewable energy practitioner he hopes to contribute to growing body of research in this topic in order to advance tribal energy sovereignty. Most importantly, he acknowledges the lack of indigenous voices in the current literature, which informed his decision to interview Native leaders and practitioners, and in no form intends to speak in the place of indigenous people in his research.

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Methodology

To determine key barriers least addressed by existing literature on the topic, three structured interviews were conducted with established tribal leaders with at least a decade of experience working directly to advance tribal energy sovereignty. Leaders were selected on the basis of their relevant experience in both solar PV project development and Native community development, identity as enrolled members of tribal communities, and demonstrated commitment to tribal clean energy sovereignty. All three interviewees serve in leadership roles in intertribal non-profit organizations dedicated to tribal clean energy sovereignty through solar energy and are of Native descent. All interviews ranged between 60 and 90 minutes and were recorded and manually transcribed after the interview by the researcher.

Relevant literature utilized to supplement these research interviews was selected based on the relevance of their primary subject matter to the research topic. Publications focused specifically on barriers to tribal energy sovereignty, tribal renewable energy development, and tribal energy sovereignty at large were chosen to be analyzed alongside the interview transcripts. Keywords queried in this selection process included “tribal clean energy”, “tribal solar, and “tribal energy sovereignty.” Recommendations were then formulated using a combination of a standard Nvivo word frequency query and objective analysis of key barriers to tribal clean energy sovereignty revealed from both the interviews and selected literature.

Thematic Findings

Geographic Variance in Policy

All three interviewees mentioned the difficulties of overcoming regulatory issues, particularly with regard to variances in policy between different states in the United States. Partisan politics have long been a reliable indicator of support for renewable energy development as the U.S. system of federalism enables state governments to hold autonomy over their own energy policies and associated utility regimes. Republican controlled states and those with strong internal fossil fuel industries often prevent adoption of supportive clean energy policies while Democratic controlled states take the initiative where federal renewables policy lags to develop policies that incentivize clean energy deployment (Karapin, 2020). Generally, a majority of Republican voters believe the U.S. should never stop using fossil fuels as an energy source, with 57% holding the view that a transition to renewable energy would have a high chance of leading to unexpected problems according to a 2023 research poll by the Pew Research Center (Center, 2023). All told, while many tribes are federally recognized sovereign nations, the U.S. state a tribal community is based in has a strong impact on their ability to develop clean energy, and this was directly stated by two of the three interviewees. A solution to this suggested by one of the interviewees is political action in the form of state and local level tribal energy advisory

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boards that can provide direct Native representation and insight on matters of tribal import. He added that this board's impact hinges on the issues of renewable energy and tribal energy sovereignty to be front and center for that state's Native community, which requires increased awareness of tribal energy sovereignty by all major tribal communities within that state. Given the significant role regulatory policies and institutions play in facilitating development of solar energy, especially in the early stages of this process, tribal engagement and representation in the development of local and state level renewable energy policy is essential to overcoming the regulatory barriers many tribal governments face before they begin to explore solar energy development on their land (Beshilas et al., n.d.).

"The mindset needs to be one of openness. We are conditioned by our environment, an environment that sets up the tribes to lose, and this needs to change. Native people are still often seen as "less than" by the rest of society. If we (tribal nations) rely solely on going the way of the courts, the private corporations, we'll never solve this. The way to solve this and fight climate change is through energy sovereignty, and it's the people that are closest to the problem that best know how to fix it." -Bob Blake, Native Sun Community Power Development

Community Awareness and Acceptance

A major theme highlighted by the interviewees but barely mentioned in much of the reviewed literature as a barrier to advancing development of tribal clean energy projects is the lack of awareness of both clean energy as a concept, and its long-term potential to uplift tribal communities. A solution mentioned by one interviewee was the promotion of intertribal networks and tribal energy events as meeting grounds through which to share best practices and successful implementations of solar projects that can serve as a catalyst for tribal communities that might be skeptical or overwhelmed by the initial barriers they encounter in the project development process.

One interviewee cited the importance of community engagement and education as a tool to increase awareness of the direct benefits provided by solar energy projects and highlighted the significance of imbedding cultural sensitivity into messaging, suggesting the crucial role that tribe-specific cultural values play in perception of potential energy projects on tribal land. In a study conducted with the Keweenaw Bay Ojibwe Community to reveal Native perceptions of the renewable energy transition, community engagement that meaningfully incorporated considerations of energy justice into its framework was highlighted as an important driver to empowering communities in achieving tribal energy sovereignty (Lee et al., 2023). Finally, one interviewee spoke of the capacity that tribal-centered renewable energy projects can have to

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bring these communities together, promote a more positive self-image, and provide a sense of much-needed healing, an outcome that he strongly suggested was dependent on direct community involvement and cultural alignment in the decision-making process of the project development phase.

Aligning Projects with Tribal Self-Determination

All three leaders and the selected literature reviewed spoke about the importance of respecting and centering tribal sovereignty and self-determination as critical factors for success in developing solar energy projects in Native and Indigenous communities (Kronk Warner, 2020). Indeed, research has shown that large energy producing tribal nations such as the Navajo Nation continue to associate the development of their available reserve of energy resources by and for their communities as a critical expression of meaningful tribal sovereignty (Duffy & Stubben, 1998). Given the disparate access to energy, unaffordability of electricity, and reliance on price-volatile fossil fuels whose use are in rapid decline currently experienced by tribes, the development of distributed energy in the form of solar PV has enormous potential to ensure tribal energy security, a view shared by interviewees and contemporary research alike (Grosse & Mark, 2023). Indeed, many of the interviewees spoke of the power of framing solar energy projects as opportunities in which to reinforce the self-sufficiency and long-term energy security of the tribe, suggesting that building this narrative into the aforementioned awareness building process could streamline community acceptance of these projects when this is missing from the initial project development process.

Honoring Tribal Cultural Values

Another major theme that emerged from analysis of the interviews which has also been supported by contemporary research was the importance of developing clean energy projects in a process that is consistent with Native cultural values (Dreveskracht, 2012). All three leaders spoke about how thoughtful consideration of the needs of the specific tribal community should be a prerequisite to all other potential benefits of a tribal solar PV project, suggesting that alignment with cultural and social values is critical to the success of a solar project developed on Native land.

“A respectful approach is required; it’s a faster process for Native-led solar because Native people know the land. A deep understanding of a tribe’s specific vision for themselves is needed before developing a project. Come at it with the approach of “what does energy sovereignty mean to you” and the tribe will plan it out in a way that works.”
-Cody Two Bears, Indigenized Energy

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Key to this is an understanding of how Native cultures have traditionally viewed both the environmental at large and energy resources relative to normative Western conceptions. For many Native communities such as the Anishinaabe of the Great Lakes Region, the acknowledgement of the innate sentience of all living and non-living things is an essential component of spiritual practice, including the importance of fostering reciprocal relationships with elements of nature often harnessed for energy such as the wind, the sun, and the water (Schelly et al., 2021). These ideas are further supported by prior research, which suggests that where potential financial benefits are concerned, tribal development projects should prioritize consideration and concern for compatibility with cultural traditions over material metrics such as end profits generated in order to be successful (Duffy & Stubben, 1998). The findings highlight the importance of ensuring that potential tribal clean energy projects, from their initial development to long-term operation center tribal values specific to the community where the project is being developed into their standard operating procedure to ensure long-term success, a process that requires direct Native involvement and consultation.

Discussion - Leadership Recommendations

What are key recommendations for practitioners operating in the current regulatory framework to secure tribal energy sovereignty?

Share wisdom and insight intertribally

Tribal communities face unique challenges in the process of developing solar projects on their sovereign territory that are often linked along common threads. Building bridges across tribal groups rather than simply within, along traditional indigenous conceptions of community can ensure knowledge is both cumulative and lasting. Tribes seeking to bring solar to their communities should look to fellow Native and Indigenous communities who have successfully developed solar projects, tribal renewable energy nonprofits, and other intertribal networks experienced in renewable energy to share wisdom, cultivate technical expertise, and build strong internal tribal solar capacity for future projects.

“The most important thing to bring with you in developing these (solar PV) projects is a sense of purpose of why you’re doing what you’re doing...it needs to be meaningful work. As much as jobs are inexistent on the reservation, as much as generating and saving money is important, the purpose of this work should be more meaningful than that. If we aren’t going to have this approach of learning from each other (native communities), it won’t work. The traditional corporate, Western way of thinking doesn’t work with tribes. Projects need a purpose that aligns with Native people’s sense of identity and culture, who it is they are...Native people need to see a connection.” -Cody Two Bears, Indigenized

Align tribe-specific cultural practices and beliefs with the project development process

The development of solar energy projects on Native land by and for Native communities is not a one size fits all process and requires buy-in from all members of the community for which it will serve. Most importantly, these projects must have a deeper purpose that transcends simply providing a new energy source: they must provide a connection to and be closely aligned with both the unique cultural identity and long-term goals specific to that tribe to ensure they are environmentally and economically sustainable.

Cultivate trust and reconciliation

Nearly half a millennium of settler colonialism has left indelible generational wounds in the North American Tribal consciousness, significantly damaging the relationship between Native American communities and non-Native entities, namely regulatory bodies that govern renewable energy development nationwide. Non-Native stakeholders should look to Native leadership and expertise and seek to build reciprocal relationships of trust to heal the deeply rooted distrust built upon centuries of institutional marginalization in the process of developing Native renewable capacity.

Conclusion

The rapid transition to renewable energy worldwide is an urgently understood necessity if the global community hopes to limit emissions and strive towards economy-wide decarbonization, yet reliance on purely technocratic solutions without considerations of equity actively sidelines Native communities already marginalized by a history of normalized settler colonialist processes (Levenda et al., 2021). The critical trust responsibility beholden to the federal government to guarantee tribal sovereignty must extend to the complex regulatory structures and bureaucratic processes that currently stymie development of Native-led renewables and tribal energy sovereignty at large (Maruca, 2018).

The recent passage of the Inflation Reduction Act and its sweeping provisions for the development of tribally sourced renewable energy represents the single largest influx of available funding for tribes seeking to benefit from electrifying their communities, dealing a blow to the most significant roadblock impeding the tribal clean energy sovereignty (Oxendine, 2022). Whether these funds can be affectively accessed by tribes still navigating the complexities of the established energy regulatory landscape remains to be seen, and will require both thoughtful collaboration and inclusivity in the project development process between the federal government and the tribes they seek to support (Grosse & Mark, 2023).

For tribal communities to meaningfully benefit from the ongoing clean energy transition, it must incorporate new ways of indigenous thinking that honor the old ways of indigenous environmentalism, eschewing the status quo colonialist view of energy resources as purely extractive or productive (Two Bears, 2024). The development of solar projects in indigenous communities requires a thoughtful approach, with each project tailored to the specific needs of the community it will serve and in sync with the customs, traditions and governance structures unique to each given tribe (Lee et al., 2023). This suggests that renewable energy development on Native land must include not only Native representation but be Native-led, infused with the cultural knowledge and values reserved to the specific tribe these projects will serve and rooted in meaning that transcends immediate material benefits (Kronk Warner, 2020).

While enormous strides will still need to be made in leveling the playing field for tribal communities to overcome the innumerable structural, socioeconomic, and regulatory barriers they face day to day, tribal clean energy sovereignty in line with the established doctrine of Native self-determination is a promising dual pathway to economic self-sufficiency and energy independence for these communities (Dreveskracht, 2012). In the absence of a comprehensive overhauling of the existing energy regulatory framework in a way that directly involves and benefits tribal nations, the growing efforts of Native-led organizations, intertribal networks, and energy equity entities to creatively advance tribal clean energy sovereignty have served to fill in the many gaps in Native access intrinsic to the current regulatory landscape they must operate under.

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Further research that draws on interdisciplinary sources and leverages Native and Indigenous values about energy use often ignored by conventional settler thinking is urgently needed as federal policy continues to 'catch-up' in incorporating climate and energy justice into its core framework (Grosse & Mark, 2023). The inclusion of Native-led research, steeped in the cultural nuances often missing from and critical to this topic has the potential to fill these traditionally unconsidered blanks of insight in the subject, and ensure the original caretakers of the land now known as the United States of America have a seat at the table of the clean energy transition.

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