Considerations of Green Electrification in Tribal Lands

An Environmental Justice Approach to Policy

Written By Aditya Retnanto & Rebecca Yap

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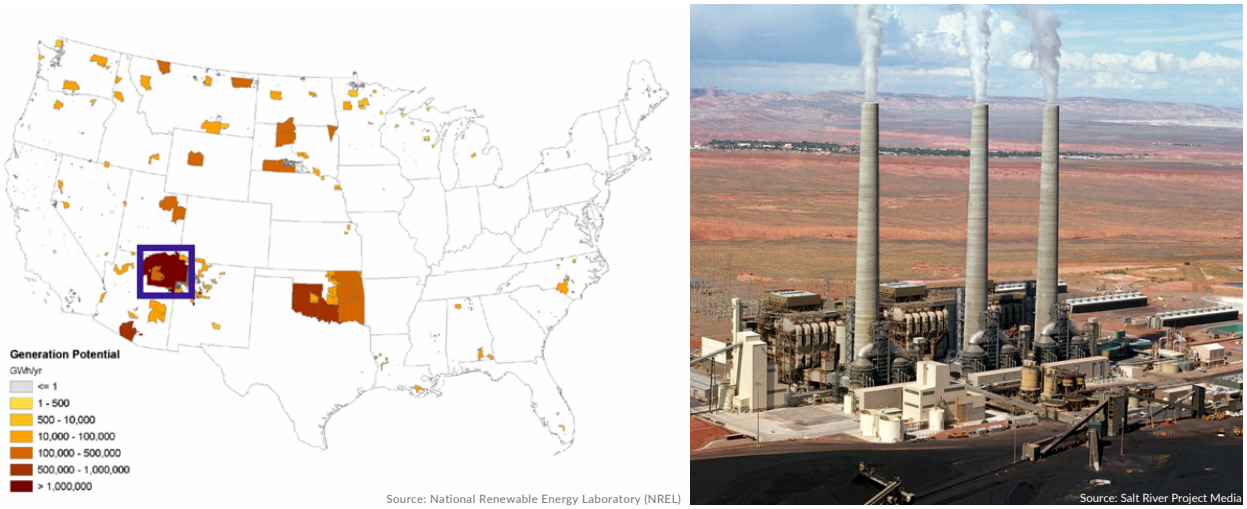
Executive Summary

This policy brief discusses the dilemma of providing electricity to rural communities while maintaining the importance of cultural values of the rural community, specifically, the Navajo. The Navajo people have historically faced trouble connecting to the grid due to high costs while energy from the Navajo have powered neighboring states. Navajo Nation is an ideal location to build solar panels given the area of land available. Past experiences of energy projects have led to disproportionately negative long-term health effects to the Navajo as a result of living near the sites. Their experiences with external parties have presented a dilemma in successful implementation of policy, because the Navajo view environmental preservation as a duty as guardian of the land. Failure to account for the Navajo's cultural values, and desire to climb the socioeconomic ladder result in misaligned policies and high levels of mistrust between the two parties.This brief recommends implementations anchored in a combination of collaboration, fair participation and alignment with cultural values of the local community. Accounting for the differing values of the Navajo and need for green energy, the brief recommends the development of community solar, leveraging messengers to highlight benefits of green energy, higher level of transparency in health effects and finances, as well as a process that prioritizes inclusivity of all stakeholders.

Introduction

Vast amount of land has made it difficult for utility companies to connect individuals to the grid. On average, it costs $40,000 to electrify homes in Navajo Nation.[1] The lack of electrification amplifies the economic constraints faced by the tribal community and encourages unsustainable behavior. For example, Navajo families drive extended distances to reach watering stations and cook using gas powered appliances resulting in unnecessary carbon emissions.[1] Electrification allows filtered water to reach their homes and utilize electric appliances to minimize carbon footprint. If the benefits of electricity improve both household wellness and global carbon footprint, what are the barriers in accepting electrification? This brief addresses the provision of electricity to rural communities while being mindful of the importance of climate consequences.

Navajo Nation's sovereign status and history introduces complex nuances for successful policy implementation. Extraction has been the primary source of income for the Navajo. It is estimated that the coal-powered Navajo Generating Station[2] contributed $1.3 billion to the local economy throughout its lifetime. Operated by the Salt River Project (SRP), a public utilities company, the plant primarily serves customers in Arizona, Nevada and California, while continuing to underserve the Navajo Nation. Such projects have caused detrimental health effects to the Navajo community. Prior to the establishment of coal, uranium mining was the primary source of income for the Navajo. As a result, the local economy was boosted at the expense of widespread lung cancer among the miners.[3]



(Left) Photovoltaic Potential of Navajo Nation boxed in blue (Right) Navajo Generating Station

The transition, however, is not solely on the part of external parties and authorities to the Navajo Nation. The inequitable risks of coal and deeper understanding of climate change have led the Navajo to desire a transition to greener energy sources, like authorities and utility companies. The development of solar and wind farms have been proposed to replace the coal plant in tribal land by utility companies and external parties. The land of the Navajo, especially, is primed for this. Ideal weather conditions combined with ample space make the land optimal for large-scale renewable projects. The National Renewable Energy Laboratory[4] projects that on Navajo Land wind generation can yield 329,108,277 MWh and solar 1,829,621,623 MWh of electricity per year respectively.

Despite this, concerns grow among the Navajo Nation that with the siting of these technologies, they will continue to receive unequal health burdens and be unfairly excluded from community benefits as a result of remaining under-electrified. A potential remedy necessitates a consideration of the worldviews of the Navajo Nation.

An important element is the values and beliefs of the Navajo community, as they play a large role in the way of life of the Navajo Nation. Pertaining to climate, the Navajo people connect the preservation of clean air, water, and natural surroundings as a responsibility to sustain ethics of environmental stewardship for the future.[5] Further, the establishment of the Navajo Tribal Utility Authority (NTUA) is a reflection of the community's desire for energy autonomy. The worldviews of members of the Navajo Nation cannot be uniformly analyzed. There is a combative relationship between the economic prosperity and technological benefits electrification affords and traditional agricultural lifestyle of some members of the Nation. This policy brief analyzes the failures of prior policies to address historical context and suggest equitable policy guidelines for mutually beneficial solutions.

Policy Critique

Prior policies have attempted to satisfy energy demand in rural areas and the transition to renewables has been met with limited success. This section looks into policies surrounding renewable energy and whether they sufficiently serve the needs of the Navajo Nation.

Navajo Green Jobs Effort of 2009

To transition to a greener local economy, a sustainably-focused job initiative was proposed by the Navajo youth.[6] The movement relied on mobilizing the youth through social media and calls for Navajo leaders to transition from coal to renewable energy. For the youth, the social effect amplifies their reach and strengthens their greener values to call for change. Calls for a green transition have instead polarized older generations who have relied on coal as a source of energy and income. The approach proposed by the Navajo youth challenged pre-existing values of the elders. No doubt, they continued to act in their individual best interests, and thus support for the movement remained limited to the youth. The previous generation may not trust the youths and ignore their calls for change. As a response, the elders state that traditional jobs in livestock and agriculture were inherently “green”. The ambiguity in the term “green” curtailed the potential of the movement.[7] This miscommunication and misalignment in understanding between the two retained coal as the predominant source of energy in the Navajo until 2019.

Navajo Youth March for Green Jobs

External Developments Solar Energy

The closure of the Navajo Generating Station marked the start of an aggressive strategy to transition into renewable energy. In collaboration with the SRP, land in Navajo Nation was leased to install the "Kayenta I" solar farm, which fueled the creation of jobs and stimulated the local economy. As part of the partnership, the cost of electricity was subsidized. These financial benefits supported individuals' decision-making and were important in garnering support for a segment of the population.[8] However, such developments could be perceived as repetition of the harmful history of energy projects for the community. The holistic benefits of solar panels are challenged by the Navajo community. The Navajo public believed that the NTUA was acting in self-interest to maximize revenue by selling to external markets[9]. Furthermore, the land required to install panels directly challenged the traditional grazing lifestyle of the Navajo. Despite the transition to renewable energy, which was in theory supported by all parties, the project was obstructed by mistrust.

Kayenta I Solar Facility

Volunteer Efforts

Light Up Navajo[10]is a mutual aid project proposed to connect the existing grid to rural communities. Volunteers from external utility companies come onto reservation land to extend pre-existing electric grid systems to rural areas, providing access to electricity to residents. However, relying on external volunteers is not sustainable as a strategy to electrify rural communities in the long term. The project's motivation is described in its recruitment drive as highlighting the inconvenience and harm experienced due to the lack of electricity access. Volunteers are drawn in through the humanitarian lens, rather than the sustainability one. The campaign's success speaks for itself: three completed phases. The humanitarian messaging could have encouraged more people to volunteer, since it was devoid of political messaging. Green energy has been politicized by liberals and many conservatives and a connection to political leanings could risk divisive opinions which would limit the recruitment of volunteers. However, these positive effects may not last. The extended grid requires extra, year-round maintenance to sustain the resiliency of the system and constant electrification of homes; thus a constant stream of volunteers is crucial.

Volunteer Linemen Working on Extending the Navajo Grid

Federal Intervention

Policies such as the Inflation Reduction Act (IRA) have not paid enough attention to the needs of rural communities.[11] Policies do not prioritize climate adaptation and grid resilience for rural communities, as it does not address the key concerns of the communities.[12] Despite incentives to a transition to renewable energy use, the IRA does not include tighter restrictions on permits awarded to oil and gas industries from the area and other industries whose secondhand emissions continue to infect,[13] which would have contributed to more stringent targeting of the siting of extraction and reduced likelihood of bearing health risks of living near the area. Investments in infrastructure such as public transport, affordable housing, community-owned energy production infrastructure could also be expanded upon and included in the IRA. Such provisions would greatly benefit the community with access to modern facilities and they are in turn more likely to interact with cleaner energy, as well as funding their energy independence.

Policy Recommendations

The core of our recommendations centers on energy sovereignty Improvements emphasize better listening and attention to the needs of the community by having them drive energy access and development, building a process that yields public participation, and improving trust levels by anchoring on a process based on transparency. There is no universal way in which people interact with energy, as it is shaped by our relationship with others.[14] Therefore, we prioritize a grassroots approach as it acknowledges the social structure and relations of the Navajo.

1) Prioritize Community Solar Projects

To address concerns of external actors with ulterior motives, we suggest home or community-based solar approaches for rural areas be prioritized. We can generalize the approach to the Navajo Community and emphasize the need for a decentralized approach to electrification. While the NTUA serves as a vehicle to assert their energy sovereignty, as shown in the critique, they rely on external actors to supplement their projects. Such projects may provide clear economic benefits to the community, but they do not align with the Navajo Nation's biospheric values.[5] Community solar projects can be synergized with Navajo values as it is a way to reassert their sovereignty as a grassroots approach to defining their energy future.[9] This minimizes the amount of land required for energy projects and can further lead to renewable adoption.

2) Utilize Trusted Messengers to Communicate Green Electrification Benefits

Persuasion to adopt new technology may depend on how aligned the community is with their values. Effective values-based climate change campaigning would identify values and match campaign messages to those values for target populations.[15] As seen in the rural Navajo community, reasons for resistance to renewable energy adoption is due to perceived risks and interaction with unfamiliar technology. In particular, such messaging from community leaders may convince local members of the community of green energy and electrification. These community leaders are well-respected and trusted in their community and likely share the worldviews of the community. The community leaders can emphasize that establishing ownership of renewable energy is a pathway for reconciliation of Navajo tradition and colonial history[16]. With the match in values already in place, locals are more well-positioned to trust the direction with the siting of renewable technologies and potential health benefits.

Given the low trust and high resistance from the Navajo people to development of unfamiliar technologies, training efforts within the Navajo for community leaders is a potential solution to leverage the already-strong networks and relationships in the community. Volunteers in the Light Up Navajo program for example can train community members of the Navajo to take part in the electrification so on the whole the community is empowered and there is, on the whole, a steady stream of volunteers. Community leaders should also be leveraged, using their spheres of influence within the community, to convince their members on the benefits and utility of renewable energy, as well as be the bridge of communication allaying any concerns from the locals to authorities.This should also be paired with regular consultation meetings between community leaders/linemen and members of the Navajo to keep them updated on progress, as well as to get their input on what has been happening.

3) Disclose Both Health and Financial Information

To ensure a just transition within Navajo Nation, policymakers must ensure that tribal members are financially compensated in addition to disclosing the supply chain of potential health effects. Transparency can lead to greater acceptance within the tribal community and fully capture a wider range of beliefs in tribal members. Furthermore, tribal members can use this information to analytically decide the extent of energy projects. Renewable projects in conjunction with public utilities such as the SRP, improve the economic equity of the community as prices for electricity are subsidized. But proximity to energy systems disproportionately harm communities and people who live near it. Building a large system requires an influx of trucks that output harmful carbon emissions. Additionally it brings hidden costs of fossil fuels, an inconvenience, to the community. Per the Union of Concerned Scientists[17], these include site accidents, lung disease (from inhaling emissions over time), water pollution, mudslides, landslides, respiratory risks and disease.In the end, everyone connected to the grid will receive the same access to energy.

4) Involve All Stakeholder Early in the Development Process

A promising solution is to include locals in discussions in the initial planning process, to understand their perspectives and concerns. The Navajo community have attachment to certain portions of land as they may be considered sacred or useful for grazing. Being mindful of how people interact with their environment as a reflection of their identity can lead to widespread acceptance of projects.[18] Early conversations can flag potential concerns and will provide them with the ability to design their energy uses for current and future generations. In this democratic design process, it addresses community perceptions of risk and deeply held traditional values[18]. Doing so can help build public trust, confidence and support for siting of renewable energy as the process is fair and not imposed forcibly, leading to greater acceptance.

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