Tribal Sovereignty and Nuclear Power

Riley J. Fisher,* Samuel G. Dotson, * Madicken Munk,*

*Dept. of Nuclear, Plasma, and Radiological Engineering, University of Illinois at Urbana-Champaign, Urbana, IL 61801

INTRODUCTION

The majority of research relating nuclear energy and native tribes has focused on reparative efforts. Examples include studies of mismanaged mining operations [1], failed waste management projects [2], and hazardous weapons testing programs [3] — all harmful activities. While valuable for learning from mistakes, understanding oversights, and developing means to alleviate these harms, this area of study focuses solely on how nuclear energy has harmed indigenous communities. This paper shifts from the perspectives of previous studies and instead explores the capabilities of nuclear energy to uplift tribal communities. This paper will provide a brief overview of energy sovereignty in native land, followed by a preliminary investigation into a potential future that would utilize nuclear energy to achieve energy goals. The results of this study will be presented at the 2024 American Nuclear Society Student Conference.

Energy Sovereignty

Although different groups and governments define energy sovereignty in myriad ways, this work utilizes the definition provided by Laldjebaev et al. 2016 [4]:

> [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.

While part of a larger overall discussion of tribal sovereignty, the concept of energy sovereignty for tribal nations is related to the dependency on power produced by the United States. Achieving energy sovereignty and independence from the U.S. electric grid is a primary goal of many tribal energy initiatives [5], which is often pursued through Tribal Energy Resource Agreements (TERAs) and Tribal Energy Development Organizations (TEDOs) [6]. Additionally, as outlined in United States legislation, the Department of Energy (DOE) has a responsibility to aid in the energy goals of native tribes. The Energy Policy Act of 1992 [7] states "The Secretary of Energy... shall establish and implement a demonstration program to assist in Indian tribes in pursuing energy self-sufficiency and to promote the development of a vertically integrated industry on Indian reservations [...]" by providing grants, low-interest loans, and technical assistance. Recently, DOE reaffirmed its right to preferentially purchase electricity from tribal groups with the Indian Energy Purchase Preference (IEPP) [8]. The mutual benefit among native tribes and the U.S. federal government is a key motivator for both groups prioritizing tribal energy sovereignty. Within the preliminary investigation and literature review, no energy-producing tribal nation was identified to be entirely energy sovereign. Furthermore, despite the reaffirmation of the IEPP, no use of this authority has been identified. The next section outliness the challenges to tribal nations' energy sovereignty.

Barriers to Independence

An extensive review of the barriers facing tribal energy sovereignty was published in early 2024 [9]. The 'key barriers to tribal energy sovereignty' proposed in this paper can be categorized into two factors: Historical (contexts that cannot be changed) and modern (challenges that could, in theory, be changed). The barriers titled 'Ethnic Cleansing,' 'Forced Migration,' 'Forced Coexistence,' and 'Land Fragmentation,' are examples of historical factors. These are challenges that altered the identities of native communities as a result of U.S. government actions. The barriers of 'Inadequate Consultation,' 'Federal Bureaucracy,' 'Lack of Institutional Capacity,' and 'Inability to access tax credits,' are examples of modern factors that could be addressed with proper intervention [9]. Economic, regulatory, and political factors constitute the main modern barriers to tribal energy sovereignty. An important nuance to the complexity of regulatory solutions to energy sovereignty is highlighted by Former Senator Ben Campbell [**?**] :

> The Committee on Indian Affairs has been informed over the year that the Secretarial approval process is often so lengthy that outside parties, who otherwise would like to partner with Indian tribes to develop their energy resources are reluctant to become entangled in the bureaucratic red tape that inevitably accompanies the leasing of Tribal resources.

This quote, combined with previous efforts to enhance tribal energy sovereignty described above, illustrate the ways government regulation could help or hinder tribal goals. This complex interaction of regulation, economics, and technology, is a major reason no tribe has achieved complete energy sovereignty.

PRELIMINARY RESULTS

The U.S. Department of Energy's Office of Nuclear Energy Nuclear Energy Tribal Working Group (NETWG) leads the endeavor of using nuclear energy to advance tribal nations' energy objectives. This group, which includes representatives from 12 tribes and tribal organizations, is dedicated to expanding educational and economic opportunities, management of spent fuel, emergency preparedness, and advancement of emergent reactor technologies for tribal groups [10]. Economic development and technological advancement are directly related to energy sovereignty. While the other initiatives may benefit overall goals of self-sufficiency, they will not be a core focus

of this work. The NETWG has two publicly available documents that report on the status of energy-related U.S.-tribal relations. The first, published two years after the NETWG charter, discusses the history of consent-based siting on tribal land [**?**], while the second reports on the status of educational opportunities in native lands [**?**]. Additionally, the NETWG announced a $1.5 million funding opportunity in 2023 facilitate increased communication between tribal and federal nuclear energy representatives. Despite limited public awareness regarding in-depth government efforts and initiatives, it is evident that there are groups interested in and resources available for further work pertaining to nuclear-based tribal development.

Further Investigations

Due to the significant knowledge and development gaps surrounding this area of research, this study aims to serve as initial grounds for further exploration into nuclear energy solutions for native nations. **The authors intend to survey tribal communities to determine the interest in tribal-owned nuclear power, as well as interview tribal leaders to strengthen context surrounding economic, regulatory, and cultural (e.g., education, risk-perception) challenges.** Additionally, this study will include a review of existing federal energy and tribal legislation and nuclear power regulation. These reviews will determine the extent of regulations regarding nuclear technology deployment within tribal nations and may result in recommendations for legal or regulatory changes. Subsequently, the authors will demonstrate a feasibility utilizing a tribal-owned microreactor deployment scenario. The progress and findings of this work will be presented at the 2024 American Nuclear Society Student Conference.

REFERENCES

1. J. HOOVER, M. GONZALES, C. SHUEY, Y. BARNEY, and J. LEWIS, "Elevated Arsenic and Uranium Concentrations in Unregulated Water Sources on the Navajo Nation, USA," **9**, *2*, 113–124.
2. D. ENDRES, "Sacred Land or National Sacrifice Zone: The Role of Values in the Yucca Mountain Participation Process," **6**, *3*, 328–345, publisher: Routledge _eprint: https://doi.org/10.1080/17524032.2012.688060.
3. E. FROHMBERG, R. GOBLE, V. SANCHEZ, and D. QUIGLEY, "The Assessment of Radiation Exposures in Native American Communities from Nuclear Weapons Testing in Nevada," **20**, *1*, 101–112, _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/0272-4332.00010.
4. M. LALDJEBAEV, B. SOVACOOL, and K.-A. KASSAM, "Energy security, poverty, and sovereignty: Complex interlinkages and compelling implications," pp. 97–112.
5. W. A. P. ADMINISTRATION, "Tribal Authority Process Case Studies: The Conversion of On-Reservation Electric Utilities to Tribal Ownership and Operation," .
6. B. O. I. A. DEPARTMENT OF INTERIOR, "25 CFR Part 224 – Tribal Energy Resource Agreements Under the Indian Tribal Energy Development and Self Determination Act," .
7. P. R. D.-I.-. REP. SHARP, "H.R.776 - 102nd Congress (1991-1992): Energy Policy Act of 1992," Archive Location: 1991-02-04.
8. J. GRANHOLM, "MEMORANDUM FOR DEPARTMENT HEADS AND SENIOR PROCUREMENT OFFICIALS," .
9. D. RAIMI and A. DAVICINO, "Securing energy sovereignty: A review of key barriers and opportunities for energy-producing Native nations in the United States," **107**, 103324.
10. D. OF ENERGY, "Nuclear Energy Tribal Working Group," .