

# Planning for Seven Generations

## Energy Planning of American Indian Tribes

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### Abstract

The prevalence of energy resources on American Indian lands, the links between energy management and tribal sovereignty, and recent federal government incentives make tribal energy planning an interesting case study for community energy planning in the U.S. This paper studies the strategic energy planning efforts, energy resource development, and energy efficiency policies established by tribes within the continental U.S. The paper analyzes the results of a survey of various tribes' energy resource development and planning efforts and supplements the responses with publicly available information on resources, economics, and demographics. We find that incentives and advisory services from the federal government are key to developing the capacity of the tribes to pursue energy planning and energy resource development. These incentives are largely avoiding the misdeeds of past federal policy by promoting tribal control over energy planning and energy resource development efforts. Tribes with formal energy plans or visions are more likely to be developing energy resources than tribes without them and are engaged in a more comprehensive and sustainable approach to energy resource development and energy efficiency.

### Keywords:

American Indian Tribes  
Energy Planning

## 1. Introduction

In a world of unstable energy prices, oil spills, and the harmful effects of climate change, many communities are recognizing the need for sustainable management and development of their energy resources. This has been especially true for American Indian communities where the management of both renewable and nonrenewable resources is intertwined with energy independence and tribal sovereignty. Tribal lands are estimated to contain three percent of the U.S.'s known oil and gas reserves, as much as 30 percent of the coal west of the Mississippi, and up to a third or more of the nation's uranium reserves (Newton, 2005, p. 1086, 1107). The U.S. Department of Energy (DOE) also projected that 61 of the most populous tribal reservations and jurisdictional areas appear to have the potential for significant renewable energy development (excluding transmission costs) (EIA, 2000). As technological advancements continue to make renewable and nonrenewable resources more accessible for development, tribes are increasingly looking to develop these resources in ways that help them become more energy independent, boost tribal revenues, and adhere to the "seventh generation" notion of sustainability that takes a long term view.

The "seventh generation" notion of sustainability is often associated with American Indian cultures and is believed to have been inspired by the original Constitution of the Iroquois Nation which states, "Look and listen for the welfare of the whole people and have always in view not only the present but also the coming generations, even those whose faces are yet beneath the surface of the ground -- the unborn of the future Nation" (Parker, 1916, p. 38-39). Today, the "seventh generation" notion of sustainability has been adopted by other tribes and organizations across the country and is often synonymous with sustainable development (USDA NRCS, 2013).

Energy resource development usually refers to harvesting energy resources (conventional and others) and is often paired with promoting energy conservation and efficiency when developing energy plans or policies. To tailor an appropriate energy portfolio with the timing of investments and regulations, organizations need to make energy plans to consider these interdependent issues. The purpose of this study is to analyze both the energy resource development and energy planning efforts of American Indian communities. The study analyzes what energy resources are currently being developed on tribal lands, who is developing them, and why tribes are developing these energy resources. By analyzing a survey of various tribes' energy resource development efforts and supplementing it with publicly available information on resources, economics and demographics, this study seeks to address three research questions. What are the impetuses and conditions under which tribes develop energy plans? How are these plans and incentives related to energy resource development efforts and what are the barriers?

The prevalence of energy resources on American Indian lands, the links between energy management and tribal sovereignty, and the recent opportunities for strategic energy planning from sources like the DOE Tribal Energy Program (DOE TEP) and American Recovery and Reinvestment Act (ARRA) make tribal energy planning an interesting case study for community energy planning. However, to date the efficacy and adoption of the energy planning and development efforts of the tribes are rarely studied. As sovereign

nations, American Indian tribes are in unique positions to control and manage their own energy resources in ways that other state and local governments cannot. In this paper, we examine if tribal energy planning efforts are bearing fruit and if there are some systemic differences in the way different tribes are developing energy resources. Specifically, we are interested in ascertaining whether and how current tribal energy planning ameliorates some of the issues that plagued past mineral right allocations. To this end, we need to briefly understand some historical context of energy resource development on American Indian tribal lands.

## **2. Context**

Along with the energy resources located on American Indian lands, there is also a complicated history and entanglement of tribal sovereignty, resource extraction, and poor infrastructure provision. More than 14 percent of American Indian households on reservations have no access to electricity, compared to 1.2 percent of all U.S. households (NWF, 2010). For example, while the Navajo Nation has substantial oil, uranium, coal, and renewable energy resources within its borders, an estimated 36% (16,000) of Navajo households are without access to electricity and many more homes and families are without access to basic infrastructure, such as telephones, water, wastewater, and natural gas services (NTUA, 2012). The historical lack of tribal control over natural resources and the economic conditions in tribal communities, are often cited as some of the main reasons for this state of affairs.

While federal policies regarding tribal mineral leases and energy resources were repeatedly reformed over the 20<sup>th</sup> century, they have mostly failed to fully promote economic development or increase tribal sovereignty while preserving environmental quality on tribal lands. Tribes have historically viewed federal mineral rights and energy resource policy as a challenge to tribal sovereignty that compromises the ability of the tribe to govern as a semi-sovereign nation in the U.S. Regardless of the size of a tribe's population or land base, tribal sovereignty has both practical and political aspects. The Harvard Project on American Indian Economic Development defines political sovereignty as "the extent to which a tribe has genuine control over reservation decision-making, the use of reservation resources, and relations with the outside world." Practical sovereignty "puts the development agenda in "Indian hands" and "marries decisions and their consequences, leading to better decisions," thus promoting more effective and sustainable development (Cornell & Kalt, 2007, p. 12). The long history of tribal self-government forms the basis for modern tribal political sovereignty and the exercise of tribal powers, which are guaranteed by the U.S. Constitution, federal legislation, treaties, judicial decisions, and administrative practices (Newton, 2005, p. 205-206). Despite this legal foundation for the political sovereignty of tribes, the practical sovereignty of tribes has often been undermined, especially with the development of nonrenewable energy resources.

### **2.1 History of Tribal Energy Resource Development and Federal Regulations**

To differentiate tribal energy planning from other forms of energy planning requires an understanding of the unique issues with planning for tribal communities, an understanding

of the power dynamics within the community, and the external institutions that exert power over the community. The historic struggles faced by tribal communities have shaped tribal planning into a tool for strategic political action for tribes to advance their own community development. In this section, we briefly review the history of the legal frameworks under which tribes have pursued (or failed to pursue) energy resource development and economic development.

#### *Reorganization Era*

The 1934 Indian Reorganization Act (IRA) authorized tribes to form constitutional governments and required tribal government consent before entering into mineral leases. While mining and oil companies were required to get consent from the tribe before extracting resources, the U.S. Department of the Interior (DOI) negotiated the full details of the mineral rights leases. This process often led to leases that were undervalued. (Perdue and Green, 2010, p. 106-107). The DOI negotiated mineral leases resulted in uranium and coal mines that created significant environmental damage and toxic waste on the Navajo and Hopi reservations (Macmillan, 2012).

#### *IMDA and IERA Era*

Congress first attempted to respond to the problems with tribal mineral leases with the 1982 Indian Mineral Development Act (IMDA). Under IMDA, all tribes were authorized to enter into mineral agreements of any kind such as joint-venture production, but these agreements were still subject to the approval of the Secretary of the Interior. The IMDA allowed the tribes for the first time to directly negotiate the terms of their mineral resource production but stopped short of granting them full control over their resources (Royster, 2008, p. 1074-1077).

By 1992, little change had occurred under IMDA and the provision for tribal cooperative agreements was not widely implemented. In response, the U.S. Congress enacted the Indian Energy Resources Act (IERA), which intended to promote tribal economic self-sufficiency through energy resource development while providing for greater tribal control of mineral development on tribal lands. Unlike previous federal tribal energy legislation, IERA also involved the Department of Energy (DOE). The IERA requires the DOE to establish demonstration projects to increase the development of energy resources on tribal reservations; provide technical and financial assistance for tribal energy development projects; and to consult with tribes in a manner that requires the “full participation” of tribes in developing regulations and policy initiatives (Newton, 2005, p. 1098-1100). Many of the funding and technical assistance mandates of IERA are being carried out by the DOE TEP, which has invested more than \$30 million in 129 tribal energy projects across the U.S. from 2002-2010 (DOE TEP, 2011).

#### *ITEDSDA Era*

The Indian Tribal Energy Development and Self-Determination Act 2005 (ITEDSDA) was another attempt by the U.S. Congress to give all tribes greater self-determination and control over their energy resources. The Act intended to do this by establishing tribal energy resource agreements (TERAs) with the DOI. Under ITEDSDA, the Secretary of the Interior is required to approve a TERA if the proposed agreement complies with statutory requirements under which the tribe demonstrates “sufficient capacity to regulate the

development of tribal resources.” Once a tribe has an approved TERA, it is authorized to enter into leases and business agreements for energy resource development and to grant rights of way for pipelines and electric transmission and distribution lines without DOI approval. Thus, unlike historic federal regulations regarding tribal energy development, ITEDSDA abolishes the need for DOI secretarial approval of specific projects. ITEDSDA does not exempt tribes from the National Environmental Policy Act (NEPA) and each proposed TERA still requires an environmental impact statement (Royster, 2008, p. 1080-1081).

While ITEDSDA certainly goes much farther than past federal regulations in promoting tribal sovereignty, the cumbersome nature of technical expertise required to organize TERAs, has resulted in no documented case of a tribe actually using a TERA to develop an energy project. In practice, TERAs shift significant costs of organizing resource development from the U.S. government to the tribes and allow for more initial federal scrutiny of tribal energy affairs before the TERA is approved (Royster, 2008, p. 1082-1090).

## **2.2 Strategic Energy Planning**

In contrast with much of the past federal legislation regarding tribal energy resource development, strategic energy planning has been promoted as a tool that actually increases the practical sovereignty of tribes. As defined by the DOE a strategic energy plan, “Is a roadmap to achieving community energy goals in both the near and long term. The goals outlined in a strategic energy plan are determined by stakeholder input, so the plans are inherently local and have stakeholder buy-in” (DOE EERE, n.d. p.1). Strategic energy planning literature can be traced back to the late 1970s and early 1980s, when the oil shocks of the 1970s forced communities to evaluate their energy use and vulnerability to petroleum shortages and price hikes (Burchell and Listokin, 1982). Energy planning during this time emphasized U.S. energy independence with strategies for solar energy generation within communities, managing energy conservation under planned growth, and removing the legal and institutional barriers to energy independent communities.

The original post-oil shock discussion of using energy planning to conserve energy for a purpose unto itself has transitioned into the recent attention on “green jobs” and the economic development potential of renewable energy, energy efficiency, green design, etc. (Fitzgerald, 2010). In the same vein, tribal energy planning is linked to a national emphasis on creating green economic opportunities for communities. Given the widespread economic hardships on many American Indian lands, energy resource development is viewed with an economic development lens and as a potential source of revenue for tribal governments. For example, the Navajo already have an Oil and Gas Severance Tax enacted on any nonrenewable energy resources exported from the Navajo nation regardless of ownership of the lands (NNDED, 2010).

The primary federal advocate for tribal strategic energy planning has been the Tribal Energy Program (DOE TEP), under the DOE's Office of Energy Efficiency and Renewable Energy. Established in 2002, the DOE TEP provides tribes with financial assistance through competitive grants for renewable energy and energy efficiency projects, technical assistance through DOE laboratories, and education and training through online short courses, student internships, and workshops. Recent financial incentives offered by the

DOE TEP and from the American Recovery and Reinvestment Act have provided historic opportunities for tribal strategic energy planning. In 2010, the DOE TEP was provided a historic high of \$10 million in discretionary funding (DOE TEP, 2011). With technical and financial assistance from the DOE TEP; in addition to existing tribal energy policies, utilities, and taxes; over 30 tribes have already developed strategic energy plans (DOE TEP, 2012). Energy planning provides a tool for tribes to develop their energy resources in accordance with the values of the tribe; abide by or provide a framework for dealing with federal, state, and local regulations; and address sustainability concerns about the environmental, economic, and social impacts of developing energy resources.

Zaferatos (1998) suggests that tribal community planning in general could provide a way for tribes to combat isolationism with a new approach that balances tribal development goals with the consideration of nontribal interests inside the tribal lands. Hibbard et al. (2008), note that there is only a modest literature on indigenous planning but reaches a similar conclusion as Zaferatos; indigenous planning efforts, both in the U.S. and abroad, emphasize community and local control over the goals and agendas that are pursued through planning. The central characteristic of tribal planning efforts is that they emphasize community control to overcome the dysfunctions of externally imposed planning and policy solutions. The remaining sections of this paper examine current energy planning and energy resource development efforts by a sample of American Indian tribes.

### **3. Data & Methods**

From November 2011 to February 2012, a survey was sent to various tribes addressed to the tribal leaders and other personnel involved in energy planning and development. A list of these contacts was compiled from the Bureau of Indian Affairs (DOI BIA) directory (2011) as well as the attendees of the DOE Tribal Energy Program Review in November 2011. The survey was multi-modal, consisting of: electronic surveys sent via email, hard copies sent by standard mail, follow up phone calls, and in-person administration during the DOE Tribal Energy Program Review. The survey instrument (available in the Appendix) was designed using the principles of the “tailored design method” formulated by Dillman (2009). Tailored design involves survey procedures that build positive social exchange and encourage responses by taking into consideration elements such as survey sponsorship, the survey populations, and the content of survey questions and survey cover letters.

The response rate was 23%; 42 completed surveys were returned out of the 180 surveys that were sent. This response rate is consistent with the response rates (16% to 25%) of various past surveys of tribal leaders (Corntassel and Witmer, 2008; Taylor, 1971). These low rates are likely to be attributed to the difficulty for tribes to collect the required information in the surveys and survey fatigue or distrust.

Survey responses were then merged with demographic data from the U.S. Census Bureau’s American Community Survey (ACS) (2011) 2006-2010 5-year estimates for tribal geographies. Response data was also merged with TIGER/Line shapefiles to provide geographic context to the results and to provide coarse level detail about energy resources on tribal lands (Census Bureau, U.S., 2010). Energy resource maps were also created using

geographic information from the U.S. Energy Information Administration (EIA) and National Renewable Energy Laboratory (NREL) to determine the prevalence of different types of energy resources on tribal lands (see Figures 1 & 2).

We used standard statistical analyses to infer relationships in the survey data. Relationships between nominal variables are quantified either by Cramer's V or Phi whose range is  $[0,1]$ ; 0 refers to no correlation and 1 is perfect correlation. Relationships between ordinal variables are quantified by Gamma or Kendall's tau-c whose range is  $[-1,1]$ ; -1 is a perfectly negative relationship between the two, 0 is no relationship, and 1 is a perfectly positive relationship. Inferences are usually based on Chi-squared tests. For more detail on these survey research methods, refer to Rea & Parker (2005).

Overall, survey respondents represent an estimated population of nearly 485,000 (~15% of all people residing on tribal geographies). Differences between the mean and median population counts of the tribes responding to our survey suggest that many of the tribes are small both in terms of land area and in population, but a few are large outliers; such as the Choctaw Nation, Yakama Nation, and Confederated Salish & Kootenai Tribes.

Table 1: Population Characteristics of Tribes Responding to Survey

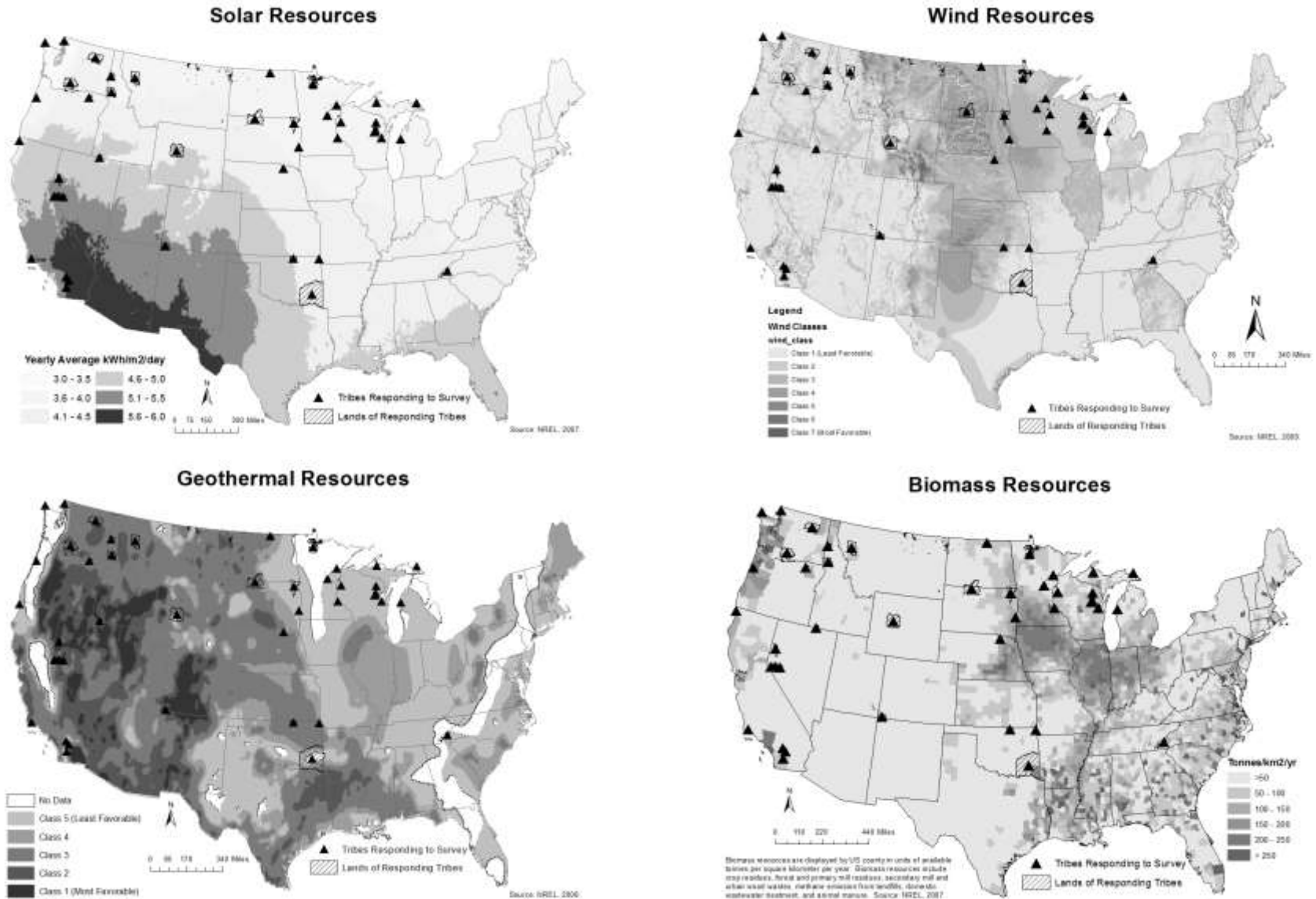
	Responding Tribes	All Tribes (Continental U.S)	U.S.
Land Area (1,000s of acres)	20,907.2	103,232	2,260,419
Mean	497.8	290.8	
Median	64.2	6.5	
Total Population (in millions)	0.48	3.49	304
Mean (actual population)	11,564	10,993	
Median	2,773	690	
% AIAN of Population	28%	27%	1.6%
Median	62%	71%	
Unemployment rate	9.5%	8.1%	7.9%
AIAN Population	16.2%	15.8%	13.9%
Median Household Income	\$37,740	\$41,421	\$51,914
AIAN Population	\$31,234	\$31,354	\$36,779
Population with Income Below Federal Poverty Level	21.6%	19.3%	13.8%
AIAN Population	32.8%	32.8%	26.4%

Source: ACS 2006 to 2010 (5-year Estimates); U.S. Census Bureau. Note: AIAN refers to American Indian or Alaskan Native ethnic group.

The responding tribes are slightly more economically depressed than all the continental U.S. tribes on average, and significantly more so than the U.S. as a whole (see Table 1). The economic characteristics of American Indian or Alaskan Native (AIAN) populations within tribal geographies and the U.S. in general are substantially more depressed than the general population. While the poverty rate is 14% for the whole of U.S., the AIAN poverty rate is close to 33%, i.e. 1 in 3 tribal members are below the Federal Poverty Level, and on average a tribal household has USD 20,000 less in annual income than an average U.S. household.

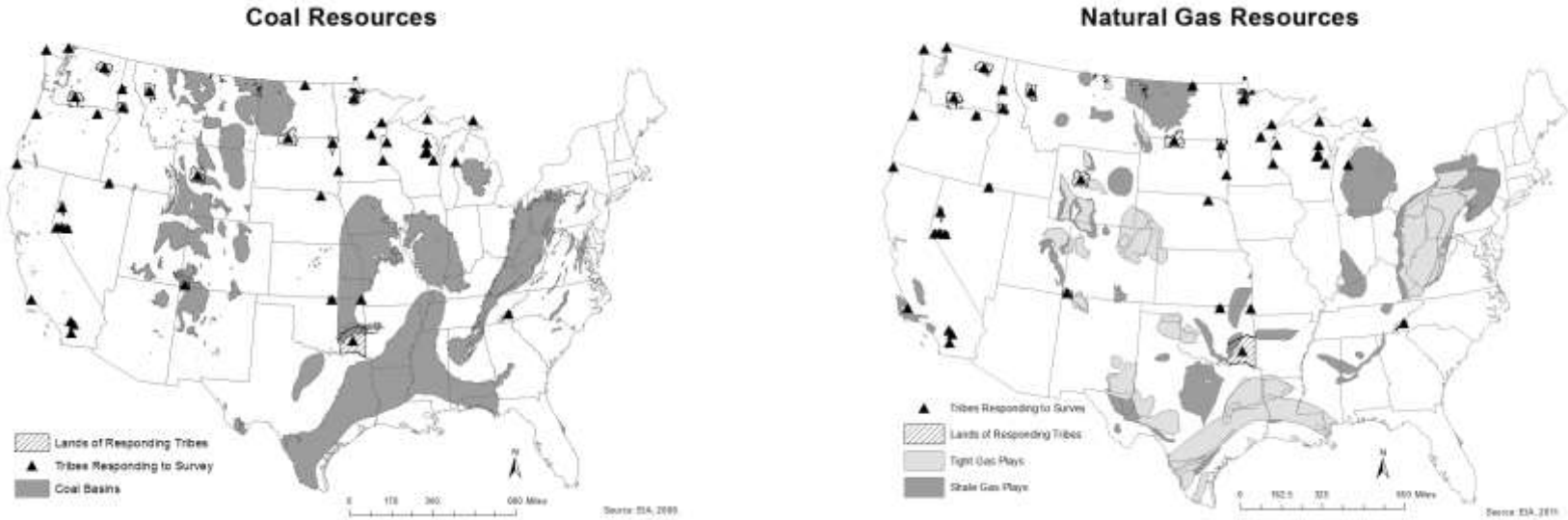


Figure 1: Renewable Energy Resources for Tribes Responding to Survey



Source: National Renewable Energy Laboratory (NREL), 2012

Figure 2: Nonrenewable Energy Resources for Tribes Responding to Survey



Source: U.S. Energy Information Administration (EIA), 2012

## 4. Results and Discussion

### 4.1 Tribal Energy Resource Development Efforts

About three-fifths of the responding tribes are currently developing energy resources. Of these tribes, a little over half (52%) have more than one type of resource that is being developed. Significantly, all but one of the responding tribes indicated they believe there is potential for future energy resource development, even if they are currently not developing energy resources. Even out of the sixteen (38%) of responding tribes that are not pursuing any energy resource development, all but one of them (94%) pointed out to at least one renewable resource that can potentially be exploited in the future. The energy resources currently being developed are varied; solar (36%), Geothermal (17%) and Biomass/Biofuel (17%). The tribes that indicated they were developing “other” types of energy resources included developments of coal bed methane, wind turbine manufacturing, and a natural gas fueled co-generation facility. One of these respondents indicated that they had received a Federal Energy Regulatory Commission (FERC) permit to pursue wave/tidal energy development. Four tribes are exploiting coal, natural gas and oil, however only one of them has renewable energy projects. It is also important to note that none of the tribes are pursuing nuclear energy including uranium mining. This is not surprising, since tribes with uranium resources, like the Navajo, experienced the contamination of their tribal lands from uranium mining during the mid-20<sup>th</sup> century and are still dealing with negative health and environmental consequences (MacMillan, 2012).

While the survey did not ask for many details regarding the scale of the different types of energy resource development projects, only 40% of respondents indicated that tribal government or tribal members were currently receiving any income from energy resource development. In addition, only three of the tribes indicated their energy projects were generating more than USD 1 million in annual tax revenues or direct income to the tribe or tribal members. Three-fifths of the tribes also responded that their renewable energy and energy efficiency projects were also intended to be showcase projects to increase awareness of these energy options with tribal community members. These survey results suggest that most of the existing energy resource development projects indicated by the tribes are relatively small in scale.

Since energy resource development can have significant land requirements, it was hypothesized that tribes with large land holdings are more inclined to develop energy resources. However, land area is not correlated to the presence or absence of energy resource development ( $\tau\text{-}c=0.63$ ,  $p\text{-value}=0.72$ ). The size of a tribe’s population does have a moderately positive association with energy resource development, meaning more populous tribes are more likely to be developing energy resources than smaller ones ( $\tau\text{-}c = 0.381$ ,  $p\text{-value}=0.015$ ). Similar results are observed when comparing the income differentials and their energy resource development efforts. The median income does not seem to play a role in the energy planning and resource development of the tribes ( $p = 0.36$ ). However, there is a relatively strong and negative association between unemployment rate and energy resource development ( $p=0.022$ ,  $\text{Gamma} = -0.51$ ). The higher the unemployment, the lower the probability the tribe is pursuing energy projects.

## 4.2 Regional Differences in Tribal Energy Resource Development

Regional differences with energy resource potential could help partially explain the different emphases placed by tribes on different energy resources. A large portion of the tribes indicated that they are now developing solar energy resources. Of the tribes currently developing solar energy, only 27% are in areas of high insolation ( $> 5\text{kWh/m}^2$ ) and are primarily located in the South West (See Figure 1) while 73% of these tribes receive relatively little solar insolation ( $< 5\text{kWh/m}^2$ ). This pattern is found again with wind resources, where out of the six tribes that are developing wind resources, only one is located in regions that have high wind potential. Figures 1 and 2 illustrate this regional allocation of energy resources compared to the locations of the tribes responding to the survey. Higher resolutions of the images in Figures 1 and 2 can be found on the online version of this article.

Table 2: Cross Tabulation Statistics between Suitability of Location and Energy Resource Developed

Suitability v. Developed Resource	Kendall's tau-c	Gamma	p-value
Solar	0.11	0.17	0.48
Geothermal	0.26	0.77	0.02
Wind	0.007	0.22	0.94

There is no correlation between high resource locations and energy development efforts for solar and wind energy (Table 2). In the case of geothermal energy, there is a strong and significant correlation, which suggests that geothermal energy sources are developed in locations that are best suited for such development. Of the 7 tribes that are developing geothermal energy, six of them are developing in areas that are classified by NREL as class 1 (most favorable) locations of identified hydrothermal sites and favorability of deep enhanced geothermal systems (EGS) (NREL, 2012).

Thus, most of the tribes are not developing renewable resources that are most suitable to them based on their location suggesting future opportunities for energy resource development. This is not an unusual pattern; solar energy production in Germany, with relatively little insolation, increased by a factor of 2 in the last decade, while the production in Egypt, with relatively high insolation, barely changed (EIA 2013). There are a number of reasons for the mismatch between resources available and extractability; not least is the inaccessibility of the transmission lines, financing mechanisms, novelty of legal frameworks to enter into public private partnerships and the lack of institutional and technological expertise to develop these energies. Some tribes that are located in very favorable locations for solar and wind resources are not pursuing any projects suggesting significant barriers to renewable energy adoption.

### 4.3 Institutions Involved in Tribal Energy Resource Development

Of the tribes developing energy resources, the tribal governments play a strong role with limited private sector involvement (see Table 3). The high level of tribal government involvement in energy resource development may be due to the prominence that tribal governments play in the affairs of American Indian reservations and communities and the unique semi-sovereign legal status of tribal governments (MacCourt, 2010). The lower levels of private sector involvement could be due to uncertainty in tribal law and the sovereign immunity rights of the tribes making private developers hesitant to get involved with projects on tribal lands (DOE TEP, 2007).

Table 3: Institutions Developing Energy Resources on Tribal Lands

Institution Developing Energy Resources	Responses	% of Tribes Responding
The Tribal government	19	70%
Tribal Corporation (defined as business-like unit to pursue energy development)	4	15%
Enrolled members operating a private business	2	7%
Company or Organization unaffiliated with the Tribe	6	22%
Other	6	22%
Total Tribes Responding to Question	27	

### 4.4 Reasons Tribes are Developing Energy Resources

#### *Economic Development*

Lagging behind the rest of the U.S. on many economic indicators, it is understandable that economic development is cited as one of the key reasons for tribal energy resource development. In fact, almost two-thirds of all responding tribes indicated that they were pursuing business and economic development opportunities with the harvesting of their energy resources (see Table 4).

Table 4: Strategies of Tribes Pursuing Economic Development Opportunities with Energy

Strategies of Tribes Pursuing Economic Development with Energy	Response	% of Tribes Responding
Development of renewable resources (Hydroelectric, Solar, Wind, Geothermal, Biomass/Biofuel, etc.)	25	81%
Energy efficiency or weatherization services	21	68%
“Green Job” training program	14	45%
Other	4	13%
Mining/Extraction of non-renewable resources (Coal, Natural Gas, Petroleum/Oil, Uranium Mining, etc.)	3	10%
Total Tribes Responding	31	

While 25 (60%) tribes indicated that they were pursuing business and economic development opportunities with the development of energy resources, only 28% of these tribes indicated that the tribal government or tribal members were currently receiving any income from energy resource development. However, four of the five tribes developing nonrenewable energy were already receiving income from this development. As mentioned earlier, tribes could be primarily using initial renewable energy projects to demonstrate to tribal members the potential for renewable energy resource development, and therefore are not currently receiving much income from the projects. Alternatively, this could imply that tribes are having difficulty capturing the revenue or monetizing the benefits of their current renewable energy efforts. Regardless, out of the tribes that indicated they were not currently receiving any income from their energy resources, 69% had some type of energy plan. These results indicate that even if a tribe is not currently receiving income from their energy resources, they are still considering the long-term implications of energy resource development and are considering it as a potential tool for economic development.

#### *Barriers to Energy Resource Development*

After identifying the energy resources being developed by tribes and some of the reasons for doing so, the survey also identified some of the barriers to developing energy experienced by the tribes. While “Lack of funding,” was listed by 83% of the tribes as a barrier, the only barrier that had a statistically significant relationship to energy resource development was the inability to capture tax incentives ( $p=0.023$ ). As government entities, tribes are unable to take advantage of the federal tax incentives for energy development that are available to private organizations. It is possible tribes are trying to use federal grants and technical assistance to help overcome the barrier of being unable to capture federal or state tax incentives to reduce the cost of renewable energy projects. Political will is also lacking in many tribes as a majority of the tribes not currently pursuing energy resource development cited either lack of institutional support or low priority as the key reasons. Out of the 11 tribes that indicated they were not pursuing any energy related economic development opportunities, a majority cited lack of funding and no department assigned to energy issues as the main reasons for their inaction. All of this could indicate that even with tribes that have the political will and organization for energy resource development, economic conditions are hampering their efforts. The next section argues that one of the tools to help tribes overcome barriers to energy resource development is developing a strategic energy plan.

#### **4.5 Tribal Strategic Energy Planning and Policy Efforts**

Tribes are developing strategic energy plans to help guide their current and potential energy resource and energy efficiency developments while meeting tribal community goals. These energy plans can take various forms such as:

- An energy vision document on tribal energy goals (precursor to a more in-depth energy plan)
- An energy plan that addresses tribal energy resources or the use of energy (example: energy management or conservation)

- A tribal plan that addresses energy indirectly (example: addressing energy in a comprehensive plan for a community within the tribe's jurisdiction)
- A plan to address an energy shortage (example fuel shortage or blackouts) or other emergency situations related to energy (wellhead fires, coal slurry spill) (DOE TEP, 2009)

Out of all the tribes surveyed, 29 (69%) indicated that they had some type of plan related to energy with 60% of the tribes indicating they had a formal energy plan and/or energy vision. Of the tribes with some type of energy plan, 18 (62%) indicated they had multiple types of energy plans. In comparison, a 2007 survey by American Planning Association and Environmental and Energy Study Institute (EESI) on energy planning in U.S. communities, one-quarter of the planners responding indicated that their community had an energy plan or policy in 2007 (Shuford et. al., 2010). The targeted support for tribal energy planning by programs such as the DOE TEP provides an external incentive for tribes to develop an energy plan which may make it easier for tribes to develop plans specifically devoted to energy than comparable small communities in the U.S. A majority of the tribes with energy plans are using the plans to address tribal sustainability concerns; creating energy related jobs and business opportunities; and for making energy affordable for all tribal members.

While there is not a significant relationship between tribes that have any type of energy plan and any type of energy resource development ( $p=0.072$ ,  $V=0.277$ ), there is a statistically significant and moderate association between a formal energy plan or vision and energy resource development ( $p=0.023$ ,  $V=0.352$ ). Formal energy plans may help tribes plan for overcoming the barriers to energy resource development better than plans that address energy indirectly or having no plan at all. It could also very well be that tribes that have the capacity to do energy planning also have the organizational capacity to pursue energy resource development.

Although there is no significant association between unemployment rate and a specific barrier to energy resource development, tribes with higher unemployment rates are less likely to have some type of energy plan ( $p=0.021$ ,  $V=0.42$ ). This speaks to the earlier point that better equipped tribes may be taking advantage of energy plans. This is unfortunate because developing an energy plan could help poorer tribes strategically overcome the barriers in developing energy resources and achieve greater self-sufficiency. Regardless of tribal unemployment rate or median income level, tribes with energy plans indicated that they were addressing job creation (67%) and economic development (79%).

Some tribes cite 'increasing tribal sovereignty' and addressing 'sustainability' as key reasons to pursue energy planning. However, there is no correlation between tribes with sustainability goals and weatherization assistance or renewable energy programs, and there is little correlation between pursuing renewable energy development projects and making a concrete policy commitment to sustainability ( $p=0.64$ ,  $\phi = 0.29$ ). This result suggests that while tribes may be keen on having sustainability as a key goal, little policy or plan implementation progress has been made in achieving that goal. However, tribes that indicated strong public support from tribal members for sustainable energy were more

likely to have already developed renewable energy projects ( $p=0.002$ ,  $\text{Gamma} = 0.66$ ) as well as make a commitment to sustainability in the text of their energy plans ( $p=0.000$ ,  $\text{Gamma} = 0.746$ ). There is also a relatively strong association between tribes that address sustainability in their energy plans and providing incentives for reducing energy consumption ( $p=0.008$ ,  $\text{phi} = 0.406$ ) such as advisory services, and grants. Therefore, sustainability in the tribal energy planning context is being approached more through individual incentives for energy efficiency and education rather than direct local government action.

There is a moderate association between tribes with some type of energy plan and having multiple tribal departments or agencies with designated responsibility for energy planning and management ( $p=0.048$ ,  $V=0.384$ ). In this case, energy plans could be functioning as a coordinative mechanism for various tribal agencies to develop and manage energy resources. When testing for a significant association between the adoption of an energy plan and individual departments (such as planning department, energy department, housing department, etc.) responsible for energy planning, only the involvement of a tribe's environment department had a relatively strong association ( $p=0.009$ ,  $V=0.404$ ). Since 50% of tribes with energy plans indicated the tribe's environment department was one of the designated departments for energy planning, tribal environment departments appear to be taking the lead role in coordinating with other tribal departments to develop an energy plan. The involvement of the tribe's environment department as one of the departments or as the only department involved in energy planning also has a relatively strong association with having sustainability addressed in a tribe's energy plan ( $p=0.005$ ,  $V=0.429$ ).

Like the association with rankings of federal involvement and energy resource development, there is a relatively strong association between federal involvement and the adoption of an energy plan ( $p=0.010$ ,  $V=0.406$ ). This is not surprising due to the heavy involvement of the DOE TEP funding and technical assistance for developing strategic energy plans for tribes. Testing for associations between rankings of state agency, private business, nonprofit, and utility involvement revealed no significant findings. These findings highlight the importance of federal involvement in tribal energy planning and indicate how the technical advice and energy plan templates provided by federal agencies like the DOE TEP can significantly impact the quality and content of tribal energy plans.

An example of the influence of energy planning templates provided by the DOE TEP is found in the moderate association between the development of solar energy and the tribal adoption of a formal energy plan or vision ( $p=0.044$ ,  $V=0.311$ ). The adoption of a tribal energy vision or formal energy plan is heavily emphasized by the DOE TEP in their Guide to Tribal Energy Development as well as using the plan to make preliminary choices between developing various types of energy resources (DOE TEP, 2009). The "Assessing Energy Resources" section of the Guide explains that; "The solar energy resource varies by less than a factor of 2 [ $\text{kWh}/\text{m}^2/\text{day}$ ] from the sunniest to the cloudiest parts of the country. The solar energy resource is also relatively well characterized throughout the United States" (DOE TEP, 2007). This emphasis in a federal energy and planning guide on assessing the potential for developing solar energy could partially explain why there is a



moderate association between tribes developing solar energy and the adoption of a formal energy plan or vision.

## 5. Conclusions

One of the telling examples of the issues facing the energy future of tribes is case of the Ponca Tribe of Nebraska. The tribe does not have a formal reservation or population according to the U.S. Census Bureau (Census Bureau, U.S., 2010) but it does have 2,800 members according to the tribe's website (Ponca Tribe, 2010). U.S. Congress has terminated the recognition of Ponca tribe in 1966 before being restored to official federal recognition in 1990. The Ponca demonstrate how institutions outside of the tribal community, such as the U.S. federal government, have historically defined the boundaries of tribal lands and that tribes have varying levels of control over resource issues within their tribal geography.

The above example illustrates some of the caveats that come with this research. It is quite difficult to have consistent definitions of membership and ownership of resources across various tribes as these definitions have changed over time. Energy resource development projects are tangled with the definitions of property rights, sovereignty and community. Therefore, this study should be supplemented with careful and in depth case studies that help understand the particular barriers each tribe is facing. Furthermore, equity issues such as grid connectivity, revenue sharing are equally as important as demonstration projects and future studies should address them. As mentioned earlier, the survey response rate was fairly low to do establish causal links or even strong associations among multiple factors and therefore the study only relied on bivariate relations.

It is clear that tribal governments are the main institutions developing energy resources on tribal lands and that energy resource development by non-tribal entities is minimal. Since all but one of the tribes indicated there are potential energy resources on tribal lands that are not currently developed, it is reasonable to assume that tribal governments will continue to play an important role in spearheading energy resource development on tribal lands. However, as the scale and intensity of energy resource development expands on tribal lands, tribal governments will need to consider the implications of energy resource development by non-tribal entities and have the plans and policies in place to ensure that these entities develop energy resources in accordance to the concerns and values of the tribal community. If tribes allowed more partnerships with public and nonprofit institutions to develop energy on tribal lands, tribes could possible receive additional sources of funding, which was the most commonly listed barrier to tribal energy resource development. The tribes that are already developing energy resources without a strategic energy plan in place should consider developing a plan to help ensure that tribal energy goals and other related goals (such as economic development and sustainability) are met while developing their energy resources.

In addition, tribes may not be taking full advantage of the renewable energy resources best suited for development in their regions. During the energy planning process, tribes should consider the energy resources best suited to their regions and identify the financial,

institutional, or political barriers that are preventing them from developing these resources. Tribes may also need to consider creating their own energy utilities or working with other utilities to expand transmission lines into areas with energy resource potential. Since many tribes are using federal financial and advisory services to help develop energy resources, tribes should make sure they are using these resources in ways that are best suited for their particular regions. Strategic energy plans can help guide tribes in making useful energy investments while addressing other issues important to the tribal community, such as economic development. With most of the tribes listing lack of funding as a barrier to energy resource development, strategic energy plans can also help tribes make wise energy investment decisions with whatever funding they are able to appropriate for energy.

With both tribal energy planning and energy resource development efforts, there was a relatively strong association with federal involvement and the development of an energy resource or the adoption of an energy plan. This feedback combined with the other results of the survey indicates that tribes are primarily using federal incentives and advisory services to develop formal energy plans and to initiate energy resource development. This supportive role of the federal government, especially through the DOE TEP, is a positive break from historic federal policies that have tended to undermine tribal sovereignty in regards to energy resource management. The incentives and advisory services of the DOE TEP are avoiding the misdeeds of past federal policy by promoting tribal control over energy planning and energy resource development efforts. However, there is a relatively strong negative association between tribes with higher unemployment rates and smaller populations and the development of energy resources. Tribal leaders as well as the federal government should be mindful of this discrepancy and tailor a more specific approach to energy planning and development for smaller and more economically depressed tribes that helps build their energy planning capacities. The federal government, especially the DOE TEP, should expand its outreach efforts to these smaller tribes and to those with higher rates of unemployment to ensure they are aware of the energy planning incentives and advisory services available to them.

Tribes with formal energy plans, especially those that address sustainability, are more likely than tribes without plans to take steps to promote energy conservation. They are also likely to have policies and departments for managing energy, and be developing renewable energy resources while pursuing economic development opportunities. In particular, tribes with energy plans are likely to have multiple tribal departments involved in energy planning and development, and there is a relatively strong association with the involvement of tribal environment departments and the adoption of a formal energy plan. The involvement of the tribal environment departments could explain why most of the tribes with energy plans are using them to address sustainability concerns since these departments would be particularly sensitive to the environmental issues surrounding energy resource development. Tribes with formal energy plans or visions are more likely to be developing energy resources than tribes without them and those tribes with formal energy plans are engaged in a more comprehensive approach to energy management and the development of energy resources for the tribe. Tribes with energy plans are more likely to connect energy resource development with other issues facing the tribal community,

such as the need for economic development opportunities and the need to develop energy resources sustainably. Therefore, if tribes truly want to promote a “seventh generation” notion of sustainability with the development of their energy resources, we recommend they adopt formal energy plans and consider initiating the energy planning process through their environmental departments.

Overall, federal financial and advisory assistance are key incentives for tribes to begin their energy planning and developing efforts. Tribes could use these initial planning and development projects to jump-start energy programs and development within their tribal lands. However, in order to truly increase their sovereignty, tribes should not develop a long-term reliance and dependency on federal resources for energy planning and development. Effective tribal energy planning can then guide tribes along a path to sustainable development of their energy resources that increases their energy self-sufficiency and tribal sovereignty.

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## Appendix (Survey Instrument)

Please provide the following information so we can identify the Tribes that are covered by this survey.

1. Name of your Tribe or American Indian organization that you are representing for this study

\_\_\_\_\_

2. Name of Tribal reservation or lands

\_\_\_\_\_

3. State(s) where Tribe or organization is located \_\_\_\_\_

4. Your position and/or title \_\_\_\_\_

5. Your contact email or phone number (optional) \_\_\_\_\_

6. Please provide the following contact information so that we can send a final electronic or hard copy of the Tribal energy planning study (Optional).

Email address \_\_\_\_\_

Name or Name of Tribal Office \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

7. Please list any website links to energy agencies within your Tribe, links to the energy plan or plans that address energy, or any other links related to energy efforts of your tribe that would be useful for this study (Optional). \_\_\_\_\_

**Directions: Please place an "X" or a check mark next to the responses you select.**

**Q1** Which of the following energy resources are currently harvested, mined, captured, or developed within the physical boundaries or jurisdiction of your Tribal lands? Please check all that apply.

- |   |  |
|---|--|
| <input type="checkbox"/> Oil                                | <input type="checkbox"/> Geothermal                              |
| <input type="checkbox"/> Natural Gas                        | <input type="checkbox"/> Biomass or Biofuel Energy               |
| <input type="checkbox"/> Coal                               | <input type="checkbox"/> Other (Please Explain)                  |
| <input type="checkbox"/> Nuclear (including uranium mining) | _____  |
| <input type="checkbox"/> Hydroelectric power                | _____  |
| <input type="checkbox"/> Solar Energy                       | <input type="checkbox"/> No currently harvested energy resources |
| <input type="checkbox"/> Wind Energy                        | <b>If selected, skip to Q2</b>                                   |

**Q1.A** Who is developing or harvesting these energy resources? Please check all that apply.

- |  |  |
|--|--|
| <input type="checkbox"/> The Tribal government   | <input type="checkbox"/> Enrolled members operating a private business |
| <input type="checkbox"/> Tribal Corporation (defined as business-like unit to pursue energy development) |  |
| <input type="checkbox"/> Company or Organization unaffiliated with the Tribe. Please explain (optional). |  |
| _____  |  |
| <input type="checkbox"/> Other (Please Explain) _____  |  |

**Q1.B** Do these energy resources located within the boundaries of your Tribal lands currently provide any tax revenue or a source of income for your Tribe or enrolled members?

Yes  No

**Q1.C** How much revenue per year (from both taxes and income to enrolled members) is generated from both renewable and non-renewable energy resources located within the boundaries of Tribal property or jurisdiction? (Please state your best estimate)

\$0-\$10,000  \$500,000-\$1 million  
 \$10,000-\$100,000  Greater than \$1 million  
 \$100,000-\$500,000  Unknown or choose not to report

**Q2** Are there any energy resources listed in Q1 that could be potentially harvested, mined, captured, or developed within the physical boundaries or jurisdiction of your Tribal lands **but are not currently**?

Yes  No **If selected, skip to Q3**

**Q2.A** Which of the following energy resources could be potentially harvested, mined, captured, or developed within the physical boundaries or jurisdiction of your Tribal lands but are not currently? Please place check marks on all potential resources and select how many years from now development of those resources will or could potentially start.

Fuel Type	0-5 Years	5-10 Years	10-20 Years	Greater than 20 Years	Unknown time-frame
Oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Natural Gas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nuclear (uranium mining)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hydroelectric power	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar Energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind Energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geothermal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biomass or Biofuel Energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Explain) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q3** Is your Tribe pursuing business opportunities/economic development with the development/harvesting of your energy resources or with energy efficiency?

Yes **If selected, skip to Q3.A**  No **If selected, skip to Q3.B**

**Q3.A** If your Tribe **is** tying business opportunities/ economic development to developing your energy resources or energy efficiency, then please check all the ways your tribe accomplishes this.

Mining/Extraction of non-renewable resources (Coal, Natural Gas, Petroleum/Oil, Uranium, etc.)  
 Development of renewable resources (Hydroelectric, Solar, Wind, Geothermal, Biofuel, etc.)  
 "Green job" training program  Energy efficiency or weatherization services  
 Other (Please explain) \_\_\_\_\_

**Q3.B** If your Tribe **is not** pursuing business opportunities/economic development with energy development or efficiency, then why not? Please check all that apply.

No significant energy resources  No department or person assigned to energy issues and opportunities  
 Not a priority  Other (Please explain)  
 Lack of funding



**Q4** What is the Tribe doing to increase the awareness of community members about renewable energy and energy efficiency options for themselves and for the Tribe as a whole? Please check all that apply.

- K-12 Education Outreach: Please Explain (optional) \_\_\_\_\_
- Adult Education Outreach: Please Explain (optional) \_\_\_\_\_
- Displaying renewable energy or energy efficiency showcase projects: Please Explain (optional) \_\_\_\_\_
- Other: Please Explain \_\_\_\_\_  None

**Q5** What are the current barriers, obstacles, or difficulties with developing energy for your Tribe? Please check all that apply.

- Lack of funding  Other (Please explain) \_\_\_\_\_
- Inability to capture tax incentives \_\_\_\_\_
- Internal organization or politics  No significant energy resources
- Lack of community support  None

**Q6** Does your Tribe have an adopted (or in the process of creating) energy plan to manage energy resources? Please check all that apply.

- An energy vision document on Tribal energy goals (precursor to a more in-depth energy plan)
- An energy plan that addresses Tribal energy resources or the use of energy (example: energy management or conservation)
- A Tribal plan that addresses energy indirectly (example: addressing energy in a comprehensive plan for a community within the Tribe's jurisdiction)
- A plan to address an energy shortage (example fuel shortage or blackouts) or other emergency situations related to energy (wellhead fires, coal slurry spill)
- Other (please explain) \_\_\_\_\_
- None **If selected, skip to Q7**

**Q6.A** Which of the following describes your energy plan? Please check all that apply if energy is addressed in multiple types of plans.

- The energy plan is an individual document and separate from other plans.
- The energy plan is a component of a comprehensive plan
- The energy plan is a component of an environmental or sustainability plan
- The energy plan is a component of a transportation plan
- The energy plan is a component of an emergency response plan
- The energy plan is a component of another type of plan (Please explain) \_\_\_\_\_

**Q6.B** Is your energy plan, or energy component of another plan connected to any of the following issues? Please check all that apply.

- Increased business opportunities/economic development
- Job creation
- Sustainability (meaning concern for both present and future economic, social, and environmental conditions)
- Transportation (public transit such as buses or decreasing car use for trips)
- Making energy (such as electricity or fuel) affordable for all members of the tribe.
- Other (Please explain) \_\_\_\_\_

**Q7** What is the general opinion of renewable energy and energy efficiency with members of your Tribe? Please select the degree of agreement with the following statements that best reflects the attitude of the members of your Tribe.

General Opinion	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
A majority of members <b>are aware of renewable energy and efficiency opportunities</b> for themselves or the Tribe	—	—	—	—	—
A majority of members <b>support energy efficiency upgrades or building retrofits</b> for the Tribe	—	—	—	—	—
A majority of <b>members support renewable energy development</b> for the Tribe	—	—	—	—	—

**Q8** Has your Tribe adopted goals, policies, programs, institutions, or legislation related to Tribal energy use and/or extraction/production of energy resources? Please check all that apply.

- A stated goal for reducing greenhouse gas emissions for the Tribe  
 Energy efficiency standards or “green building codes” in **public buildings**  
 Energy efficiency standards or “green building codes” in **residential homes**  
 Renewable energy production targets       Other (please explain) \_\_\_\_\_  
 Public transportation system  
 Public outreach or public education       None

**Q9** Please indicate all incentives the Tribe currently provides for enrolled members to reduce their energy consumption. Please check all that apply.

- Weatherization assistance program       Tax incentives  
 Grants or other financial incentives       None  
 Advisory services (pamphlets, handouts, public education, or expert advice)  
 Incentives to encourage public transit use: Please explain \_\_\_\_\_  
 Incentives for increasing walking and/or bicycle use: Please explain \_\_\_\_\_  
 Other (Please explain) \_\_\_\_\_

**Q10** Do any of your energy plans, policies, or incentives try to reduce the gasoline/oil consumption of Tribal government owned vehicles? Please check all that apply

- Incentives to encourage public transit use: Please explain (optional) \_\_\_\_\_  
 Fuel efficiency standards for tribal fleet vehicles: Please explain (optional) \_\_\_\_\_  
 Increased pedestrian and/or bicycle transit access: Please explain (optional) \_\_\_\_\_  
 Other \_\_\_\_\_  
 None

**Q11** Is the Tribe taking advantage of any incentives or grant opportunities to reduce energy consumption offered by agencies outside the Tribe? Please check all that apply.

- State incentives: Please describe (optional)  
\_\_\_\_\_
- Federal incentives: Please describe (optional)  
\_\_\_\_\_
- Nonprofit incentives: Please describe (optional)  
\_\_\_\_\_
- Other (Please explain) \_\_\_\_\_
- None

**Q12** Does your Tribe own or manage any of the following energy utilities that serve part or all of your enrolled members? Please check all that apply

- |   |  |
|---|--|
| <input type="checkbox"/> Electrical utility   | <input type="checkbox"/> Propane provider                |
| <input type="checkbox"/> Natural gas utility  | <input type="checkbox"/> Other (Please explain)<br>_____ |
| <input type="checkbox"/> Heating oil provider | <input type="checkbox"/> None                            |

**Q13** Which Tribal government department or other Tribal entity has the designated responsibility of addressing energy planning/management issues for your tribe? Please check all that apply.

- |  |  |
|--|--|
| <input type="checkbox"/> Department of the Environment and/or<br>Natural Resources | <input type="checkbox"/> Tribal Corporation (business-like unit) |
| <input type="checkbox"/> Department of Energy                                      | <input type="checkbox"/> Tribally owned/operated utility         |
| <input type="checkbox"/> Department of Commerce                                    | <input type="checkbox"/> Department of Housing                   |
| <input type="checkbox"/> Planning or Development Department                        | <input type="checkbox"/> Forest Service                          |
| <input type="checkbox"/> Department of Transportation                              | <input type="checkbox"/> Other (Please explain)<br>_____         |
|  | <input type="checkbox"/> None                                    |

**Q14** Please describe the one to two most influential Federal and State agencies, nonprofits, utilities, and private businesses that influence your tribe’s energy planning and development of resources. Also please indicate the level of involvement your tribe has with the other party (none, low, mid, or high):

Agency (Please write in the name of the agency)	None	Low	Mid	High
<b>Federal:</b> _____	—	—	—	—
<b>State or States:</b> _____	—	—	—	—
<b>Nonprofit Groups:</b> _____	—	—	—	—
<b>Energy Utilities:</b> _____	—	—	—	—
<b>Private Business:</b> _____	—	—	—	—
<b>Other:</b> _____	—	—	—	—

**Q15** Which of the following Federal agencies has your Tribe received financial or advisory assistance from for energy planning, energy management, or energy resource development?

- U.S. Department of Energy Tribal Energy Program (DOE TEP)
- U.S. Department of the Interior Indian Affairs Division of Energy and Mineral Development (DOI DEMD)
- U.S. Department of Agriculture (USDA)
- U.S. Environmental Protection Agency (EPA)
- U.S. Economic Development Administration (EDA)
- U.S. Department of Housing and Urban Development Office of Native American Programs (HUD ONAP)
- Other (Please Explain) \_\_\_\_\_
- None

**Q16** Please use the following space to describe any recommendations for improving energy planning and development for Tribes.

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**Thank you for your time spent taking this survey!**

**Please use the provided pre-stamped envelope to mail back survey response to:**