

ISSUE BRIEF 10

RENEWABLE ENERGY IN INDIAN COUNTRY

Options for Tribal Governments
by Dean B. Suagee

America's tribal lands enjoy abundant renewable energy resources. Development of these resources can meet several needs, including rural electrification, economic development, and compatibility with a deeply held commitment to balance relationships among human beings and the natural world. While renewable energy development can gain from appropriate federal and state action, there remain many measures that tribes can undertake for themselves.

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A Message from the Staff of the Renewable Energy Policy Project

The descendants of America's first inhabitants are different. Among the groups based on ethnicity, national origin and regional heritage that constitute America, only tribes can claim sovereign power comparable to that of the federal and state governments. In practice, assertion and denial of sovereignty often concerns the right to enjoy and exploit the natural resources of wide territories. For this reason - and apart from equally important questions of justice and cultural identity -- claims of sovereignty often generate implacable controversy.

How America's tribes can use their sovereign powers more effectively to promote environmentally sound energy use? In particular, how can tribes develop their gigantic store of renewable energy resources -- plant stocks, sunlight, wind, running water, and the earth's own heat?

Like most Americans, tribal communities know little about the environmental impact of the energy they use. They know equally little about technologies to use energy more efficiently, or those that convert renewable energy. At the same time, like most Americans, environmentalists and clean energy businesses know little about tribal communities. Yet, renewable energy can and should play an increasing role in what federal law terms "Indian Country."

What can renewable energy advocates and businesses do? They must show tribes that derive large fractions of their revenues from coal and uranium mining that renewable energy development constitutes a clean alternative. They must learn more about the renewable energy resource base available on tribal lands. And renewable energy businesses must work with tribes to adapt and adopt financial mechanisms able to protect outside investors in Indian Country.

What can the federal and state governments do? Policymakers must ensure that energy laws, regulations and policies include Indian Country. More basic, governments can collect, collate and make available aggregated data on energy use on tribal lands, beginning with electricity usage. Most important, governments can cooperate with the private and non-profit sectors to survey renewable energy resources in Indian country, which many observers assume to be vast.

What can tribes do for themselves? Tribal governments and communities themselves must improve energy efficiency and promote renewable energy development in their homes and on their lands. Most provocative, they can use their unique sovereign power to build green power.

Many tribes are exploring clean energy development. Those that join this growing group will find that clean energy brings the same gains in Indian Country as it does elsewhere in America: local economic development, production of green electricity as a salable product, retention of energy revenues in the community, protection of the local and global environment, and the assumption of community responsibility for environmental stewardship.

In short, tribes are indeed different. Yet, they have the same opportunities and the same responsibility to search for a sustainable energy path. We believe that renewable energy can bring great benefits to Indian Country and to America.

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Options for Tribal Governments

by Dean B. Suagee

Like most Americans, renewable energy advocates and businesspeople often know little about American Indian people and their communities. And like most Americans, tribal leaders often know little about the various technologies for using renewable energy resources. Yet renewable energy can meet several needs in Indian Country. These needs include rural electrification, economic development, environmental protection, and expression of a broadly defined but deeply held commitment by many Indian people to balance relationships among the natural world and human beings, including future generations.

Bringing renewable energy to Indian Country will require, above all, an exploration of the opportunities and constraints offered by tribes' sovereign power. As defined in federal law, "Indian Country" comprises land equivalent to 3 percent of the lower 48 states; many of these scattered lands enjoy abundant solar, wind, water, geothermal, and biomass resources. Tribal governments that administer these lands theoretically enjoy the same types of authority held by states, although in practice few tribes have explored the extension of these powers to renewable energy development. Ironically, tribal sovereignty can impede investment and other business activity from off-reservation investment, since investors cannot sue tribes in federal and state courts to recover investments, and they cannot seize tribal lands used as security. For this reason, successful development of Indian Country's abundant renewable energy resources will require continued creation of mechanisms that protect tribal sovereignty while satisfying investors' legitimate concerns.

Because of the unique circumstances of Indian Country, the federal government can play an important role in making renewable energy happen on tribal lands. Specific recommendations include:

* Evaluate federal Indian policy comprehensively: The federal agencies responsible for providing energy conservation and renewable energy assistance to state and local governments (DOE, HUD, and other agencies such as the Rural Utilities Service in the U.S. Department of Agriculture) should review their programs from the last two decades and determine the extent to which tribal governments and reservation communities have been included. Simultaneously, appropriate members of Congress might request an investigation by the General Accounting Office. The review

should consider various mandates and initiatives for conserving energy and using renewables in federal facilities, since many tribal government programs operate in buildings owned or originally constructed by the Bureau of Indian Affairs or Indian Health Service.

* Fund provisions now in place: The federal government should demonstrate its support for tribal development of renewable energy resources through increased funding for the tribal provisions of the Energy Policy Act of 1992. This should include two measures currently receiving no funds at all: the program to be administered by the Department of the Interior to provide assistance to tribes, including help in developing codes and regulatory programs, and the Indian Energy Resource Commission.¹ The mandate of the Commission should be modified, however, to include renewable energy resources and energy conservation expressly.

Nevertheless, aside from federal activity, the sovereign powers held by tribes allow them to act on their own behalf. Options for tribal governments include:

* Building codes: With or without Federal assistance, tribal governments should upgrade building codes to incorporate energy efficiency and renewable energy. In particular, tribes should adopt the Model Energy Code and land use codes that require appropriate solar orientation of buildings.

* Buy renewable power: Even without retail wheeling, tribes legally may designate a power supplier for tribally owned businesses on trust land, and they may be able to do the same for homes and some public facilities. Where regulatory conditions allow, tribes should wheel in their power from electricity providers that rely partially or totally on renewable resources. Tribes might also institute a renewable portfolio standard in their electricity purchases.

* Sell renewable power: Where possible, tribes should explore ways to install their own renewable generating capacity, either for use on reservations or for sale to utilities and power marketers.

* Use local educational facilities: Tribal colleges can investigate and disseminate information about local renewable resources, create indigenous technical capacity, and explore possible sources of and structures for renewable energy financing. Tribal colleges can also help spread popular knowledge about the links among energy, environment, and economy, and about the role that renewables can play on Indian lands. Finally, these institutions can be showcases for energy efficiency and renewable energy.

* Consider exporting Indian skills: Tribal governments or private businesses with experience with renewable energy in Indian Country may be uniquely suited among Americans to pursue such ventures in developing countries. Such international efforts might take advantage of programs offered by the U.S. Agency for International Development or the Small Business Administration. They might also prove attractive partners or consultants to private-sector or nonprofit entities seeking to promote renewable energy overseas.

* Develop and disseminate knowledge of innovative financing mechanisms: While tribal sovereignty presents certain obstacles to obtaining financing for projects in Indian Country, mechanisms exist to ensure that investors can enforce agreements and secure their interests. These include limited waivers of sovereign immunity, the conduct of business through various kinds of tribal entities that do not share in the Tribe's immunity, and the use of leasehold mortgages to create security interests in land. Tribes must develop these tools and make potential investors aware of them. Tribes also have unique sources of financing that they should develop, publicize, and exploit for renewable energy projects, such as tax-exempt revenue bonds, gaming revenues, federal grant and loan guarantee programs, and the tribe's own freedom from liability for federal income tax.

A number of Indian communities have gained experience with renewable energy technologies through a variety of demonstration projects, but these are only the beginning. This paper explores

some of the ways in which tribal governments could use sovereign powers to promote the widespread use of renewable energy systems in Indian Country. Many other options could also be considered. In a sense, the options are limited only by the creativity of the people working to make this kind of sustainable development a reality in Indian Country.

This paper describes some of the renewable energy activity under way in Indian Country. Many Indian communities have initiated renewable energy projects to find out whether these technologies really work. Numerous other such projects are in the planning stages, and increasing numbers of Indian young people show interest in the field.

Some tribal members have found such work rewarding on many levels, including the feeling that this kind of energy development resonates with their cultural values.² Indeed, renewable energy can improve the quality of life in Indian communities in several ways, but only when its use becomes commonplace. More demonstration projects will show convincingly that renewables work, although they can only hint at the development that is ultimately possible. In a sense, the options are limited only by the creativity of the people involved in working to make sustainable development a reality in Indian Country.

The examples discussed here are merely indicative of the kinds of efforts under way: with more than 500 federally recognized Indian tribes and nations in the United States, a comprehensive account would be impossible. Yet the examples serve two purposes: they provide renewable energy supporters who may not know much about Native America with a sense of the range of current activities, and they assure tribal leaders unfamiliar with renewable energy that the ideas presented are grounded in reality. This paper seeks to draw these two groups together so that they may fashion creative collaborative ventures.

In addition to providing selected field reports, this paper explores options for tribes seeking to use their governmental powers to move their communities, and the country as a whole, toward the widespread use of renewable energy. Tribes enjoy appreciable authority over their lands, but most tribes do not exercise the full range of their authority. This paper highlights ideas for the innovative use of sovereign power that appear so far to have received little attention.

PART I: BRIDGES BETWEEN COMMUNITIES

Like most Americans, many renewable energy advocates and businesspeople know little about American Indian people and their communities. And like most Americans, many tribal government leaders do not know much about the various technologies for using renewable energy resources.³ To spread the use of renewable energy resources in Indian Country, different groups need to share information. We need to build bridges between tribal communities and those forging an energy future based on sustainable energy.

Reasons to Support Renewable Energy in Indian Country

Many reservations enjoy abundant renewable energy resources: solar, wind, water, biomass, and geothermal.⁴ Tribes in the northern plains have tremendous wind power resources; southwestern reservations have the most direct solar radiation; some western reservations have geothermal resources; and tribes in many regions have biomass resources. Renewable energy advocates in Indian Country tend to be tribal employees and community activists rather than elected officials, however. Transforming their enthusiasm into governmental policies presents some of the same challenges in Indian Country that it does throughout the nation. Although quite a few demonstration projects have been developed, no tribal government has yet made renewable energy development a matter of high priority, at least according to coverage in the national media or the Indian press.

If they considered the matter, tribal authorities would no doubt see that renewable energy systems

offer wide benefits compared with conventional energy. These include lower operating costs, less vulnerability to fuel price increases, softer environmental impacts, and greater local self-reliance. On the many reservations where the unemployment rate dwarfs the national average and families live in poverty, policies that limit the cost of home heating should find broad support. Since renewable energy development tends to be more labor-intensive than the extraction of nonrenewable energy resources, supporting it should help bring jobs to communities -- recycling money spent on energy and related services into the local economy rather than sending it off the reservation.⁵ Tribal governments could develop tax policies to ensure that some of these funds provide revenue streams for governmental services (although, as noted later, taxation in Indian Country is a complex subject).

A number of renewable energy technologies, particularly photovoltaics (PVs) and small-scale wind power, are well suited to provide electric power for scattered homes and communities. Some reservations have widely dispersed homes and small communities unconnected to the electric power grid, and most reservations include many potential nonresidential uses for these technologies.

Tribal policies to promote renewable energy development in Indian Country need not be limited to meeting local energy needs. Renewable resources that can be converted into electric power at competitive prices can also serve off-reservation markets. At current prices, large-scale wind power projects tend to be the most competitive renewable technology, but other projects may fit the bill too. The marketplace for electricity is somewhat volatile because it is going through some "restructuring," but one emerging trend is the availability of "green" power offered to interested consumers at a premium price.⁶

Another approach to using reservation renewable energy resources for economic development is to manufacture products and provide services for off-reservation markets. This might involve, for example, using renewable energy to meet some energy needs when making conventional products marketed by Indian people (such as solar-heated art studios and jewelry workshops), or using it to manufacture renewable energy products (such as using wind turbines to provide electricity for making PV panels).

Many reservations have experienced firsthand the environmental damage caused by conventional energy development, including the side effects of mining coal and uranium, pollution caused by oil and gas extraction, and the disruption caused by large-scale hydroelectric dams. These communities offer fertile ground for renewable energy development. Moreover, given growing awareness of the risks of climate change, many people who care about the Earth and the living things with which we share it feel a sense of personal responsibility to reduce emissions of greenhouse gases.

Among many Indian people, care for the Earth and for living things constitutes a broadly defined but deeply held cultural value.⁷ Although tribal cultures differ significantly, traditional tribal worldviews display some common attributes, including a "concept of reciprocity and balance that extends to relationships among humans, including future generations, and between humans and the natural world."⁸ Tribal government policies that promote the use of renewables and that are expressly based on such cultural values should receive broad support from tribal people.

"Indian Country" and Federal Indian Law

Different legal principles apply within Indian Country than in most of the rest of the United States. These differences create both challenges and opportunities, and they cause real problems when ignored. In some ways the differences are profound and fundamental: tribes constitute sovereign governments within the U.S. federal system. Some tribes have achieved a substantial degree of sophistication in their governmental functions, enacting laws that affect energy use (building codes, land use ordinances, codes governing commercial transactions, and so on), using model codes or

incorporating state laws with only minor changes in substance. Other tribes have not enacted such laws, or have enacted them without establishing working enforcement mechanisms. In short, people unfamiliar with federal Indian law tend to overlook the role of tribal governments as the source of authority within Indian Country for the laws that fall within the scope of state and local government authority elsewhere in the United States.

An introduction to federal Indian law is beyond the scope of this paper.⁹ In brief, while Congress is said to have "plenary power" over Indian affairs, tribal governments hold inherent sovereignty and also exercise power pursuant to delegations of authority from Congress. Within reservation boundaries, states generally have only limited powers over Indian lands and Indian persons. In some circumstances, states exercise authority delegated by Congress, and in some cases the exercise of authority based on inherent state sovereignty has been upheld, generally in matters involving non-Indians and lands that are not held in federal trust or restricted status. The legal principles that apply in resolving conflicts among these three kinds of sovereigns defy concise explanations, in part because the principles reflect the history of vacillating federal Indian policy and in part because many Supreme Court Indian law decisions of the past two decades have shown little regard for established principles when they interfered with results that a majority of the Justices favored.¹⁰

Over the last three decades, the federal policy toward Indian tribes, established by both the Congress and the Executive Branch, has supported tribal self-determination.¹¹ This policy, as reflected in a variety of federal statutes, establishes a framework in which tribal governments can take control of governmental assistance programs that would otherwise be administered by the federal Bureau of Indian Affairs (BIA) and the Indian Health Service. Building on this, many tribes are becoming increasingly proficient in administering a range of governmental services and in using their inherent sovereignty to fashion programs that serve tribal needs when federal programs fall short. Thus, in this era of tribal self-determination, tribes can use their governmental powers in many ways to promote the use of renewable energy in Indian Country. Officials need to be careful, though, in light of the uncertainty created by the Supreme Court's recent Indian law decisions.

As used in federal law, the term "Indian Country" encompasses all land within the boundaries of any Indian reservation of any federally recognized tribe plus all "dependent Indian communities."¹² Indian reservations, which are found in 33 states and which cover about 3 percent of the land area in the contiguous 48 states, exhibit a great deal of variety. Twenty-four reservations are larger than Rhode Island, but many others have only a few acres.¹³ A good number of reservations are located in remote rural areas; some are adjacent to or surrounded by metropolitan areas; most have high unemployment rates; and many have devastating poverty.¹⁴

When originally established, all lands within reservations were set aside for the exclusive use of the tribes, usually with legal title to the land held by the federal government in trust for the tribes. The concept of holding land in trust has historic origins, partly based on the practices of the sovereigns of Europe, who sought to prevent any non-Indian from claiming ownership of Indian land except by virtue of a transaction between the tribe and the sovereign. The federal law protecting Indian land from "alienation" (that is, being sold or leased) except as authorized by Congress was enacted by the first session of Congress in 1790.¹⁵ Some tribes, such as the New Mexico pueblos, hold the legal title to their land, but federal restrictions on alienation nevertheless apply.

The "allotment" era of federal policy, from about 1887 to 1934, opened many reservations to settlement by non-Indians, usually without tribal consent.¹⁶ This occurred through the division of land held in common by the tribe into "allotments" granted to individual tribal members, who were expected to become farmers. After making the allotments, the federal government made the "surplus" land available to non-Indians. Typically subject to federal trust restrictions for a limited period, the allotments then became subject to state property taxes; many parcels thus passed into non-Indian possession when their Indian owners failed to pay taxes. As a legacy of this era, many reservations have substantial populations of non-Indians and substantial amounts of privately owned

land. By the end of this period, Indian landholdings had been reduced to about one-third of what they had been in the late 1880s.¹⁷ In recent years, a number of tribes have devoted substantial portions of available revenues to buying land within the reservation that had passed out of Indian possession.

Many Indian communities are also found outside Indian reservations. Federal law treats some of these in the lower 48 states as Indian Country because they are "dependent Indian communities." In Alaska, only one reservation remains after the Alaska Native Claims Settlement Act (ANCSA) of 1971, although there are more than 200 recognized tribes. In a case decided in 1998, the Supreme Court ruled that, as a result of ANCSA, former Indian reservations in Alaska are not "Indian Country."¹⁸

Numerous tribes have developed their local economies with revenue from their local energy resources, both renewable and nonrenewable. For many decades, quite a few reservations have been major sources of nonrenewable energy resources for the national economy. In the 1970s, several tribes joined together to form the Council of Energy Resource Tribes, and the new organization plays a leading role in helping tribes make better bargains for the extraction of resources.¹⁹

Within the last two decades, a large number of tribes have begun to generate revenue through gaming operations conducted in accordance with the Indian Gaming Regulatory Act.²⁰ This has brought a relatively small number of tribes phenomenal financial success, although it has also caused some members of the general public to assume mistakenly that tribes in general are now doing so well from gaming that they no longer need federal assistance. This illustrates the risk of making generalizations about Indian Country.

Over the past quarter-century, Indian peoples have made considerable progress in developing real local control over their lands through the federal policy of self-determination, and they have seen some significant improvements in socioeconomic conditions. Many Indian communities, however, remain among the poorest in the country. One key lesson that the American public should draw from more than two centuries of dealings with Indian tribes and nations is that the material welfare of Indian communities tends to improve when the larger society respects and supports the tribal right of self-government. Thus although renewable energy development will certainly improve the quality of life in Indian communities, outsiders who want to help realize these benefits should do so in ways that respect tribal self-government.

Tribal Sovereignty and Creative Problem Solving

American Indian tribal governments possess a range of sovereign powers, similar in many ways to the powers of state governments in the federal system. Tribal governments thus can do many of the same kinds of things as state governments to promote renewable energy, such as using government buildings and programs to showcase systems, enacting legislation, and creating regulatory programs to influence and in some ways control private decisions about energy consumption.

In the arena of energy consumption and regulation, however, these tribal powers are often more theoretical than real. State governments routinely do things that few tribal governments have even considered. Although a handful of tribes have created their own electric utilities along with a regulatory apparatus, these examples stand out largely because they are so unusual. (Tribes that have established electric utilities include the Navajo Nation in Arizona, New Mexico, and Utah; Tohono O'odham Nation in Arizona; Fort Mojave Tribe in Arizona and California; Confederated Salish and Kootenai Tribes of the Flathead Reservation in Montana; and Metlakatla Indian Community in Alaska.)

In one sense, only the availability of the resource and the creativity of the individuals involved limit the options available to tribal governments. In another sense, tribal governments face many practical limits to what they can do, including constrained finances and competing demands for available funds, limited infrastructure for community education in Indian Country, and meager career training programs available to tribal members.

The allocation of scarce resources by tribal governments can be approached as an exercise in creative problem solving: given the goal of widespread adoption of renewables, what steps can be taken to reach that goal? A United Nations study of rural electrification in developing countries provides useful insight. The report identified four critical needs that must be addressed if renewables are to fill the electricity gap in the developing world: political will, locally available renewable energy resources and knowledge about them, the creation of local technical capacities, and the creation of appropriate funding mechanisms.²¹ These needs are generally applicable to renewable energy development in Indian Country as well.

These four needs may seem obvious, yet they remain critical. A community can only develop the renewable resources it has available. The use of relatively new technologies will more likely succeed over the long term if the people using the technologies also develop the capability to maintain them, and more people will be likely to invest in renewables if there are local sources of expertise in design and installation. Financing mechanisms are especially important for renewables. Many such systems save money when evaluated on a life-cycle basis, but few consumers consider life-cycle terms when purchasing energy.²²

Political will may be the most critical need, and it is required at all levels of government. Energy marketplaces are heavily influenced by governmental policies. Policies that favor conventional energy development tend to retard renewable energy development. Few U.S. political leaders are outspoken in support for renewable energy development. Tribal leaders could help change this.

Nevertheless, tribal members are American citizens who live in the modern-day United States. They share other Americans' dreams of material well-being. And like other Americans, they may be disinclined to invest in energy options that cost more up front, even if they save money in the long term. They may also resist paying more for energy options that benefit the entire community unless they know that everybody is paying their fair share. Renewable energy strategies for Indian Country have a better chance of success if they emphasize how such energy sources, in combination with energy conservation measures, can help people improve their quality of life.

PART II: OPTIONS FOR TRIBAL GOVERNMENTS AND OTHERS

This section presents strategies to promote renewable energy development and encourage energy conservation so that every dollar spent on renewable goes farther. Most emphasize the use of governmental authority, but some also consider what could be done by nongovernmental actors such as educational institutions and private businesses.

Demonstration Projects in Government Facilities

A number of tribes have made solar energy a part of everyday life by using solar design features in public buildings and other community facilities. While standard practice in the solar building industry, these features are often new to tribal communities.

Some tribes have used passive solar design in their tribal administrative office buildings, including the Wampanoag Tribe in Massachusetts.²³ In addition, quite a few tribal housing authorities have sponsored the construction of solar homes, using financial assistance from the Department of Housing and Urban Development (HUD), including Northern Pueblos in New Mexico, Cheyenne River Sioux in South Dakota, and the Sault Ste. Marie in Michigan. The Oneida Tribe in Wisconsin

has used funding from the Department of Energy for its energy efficiency and solar homes program. The casino operated by the Mohegan Tribe in Connecticut features a number of exemplary energy conservation features.

Some tribes have been rather creative in using federal financial assistance for demonstration projects. For example, the Hualapai Tribe in Arizona constructed an office building for its Natural Resources Department as a recycling demonstration project. They built this passive solar "earthship" almost entirely out of recycled materials, including used tires in the thermal mass walls.

These demonstration projects represent steps in the direction of the widespread use of renewable energy in buildings -- but only first steps. Through their lawmaking powers, tribes have a range of tools available to make the shift to widespread use of renewable energy in buildings happen sooner rather than later.

Building Codes and Land Use Planning

The practicality of renewable energy use in buildings depends heavily on construction decisions; the orientation of a building with respect to the sun, for instance, can either facilitate or foreclose options for adding solar features later. In addition, it costs less to collect and store solar heat for an energy-efficient structure, so energy conservation considerations go hand-in-hand with the optimal use of renewable energy. Likewise, it is easier and cheaper to build solar and energy efficiency features into homes rather than to retrofit.

Yet many builders and homeowners make decisions affecting energy use without considering the implications.²⁴ In the years ahead, we can expect to see efforts at all levels of government to make new buildings more energy-efficient, in part because residential and commercial buildings account for more than a third of all the energy consumption in the United States and offer a wide range of opportunities for reducing the U.S. share of global greenhouse gas emissions.²⁵

Building codes represent the most basic policy tool for making new construction more energy-efficient. In 1983 the Council of American Building Officials published the first version of the Model Energy Code (MEC), developed for incorporation into state and local building codes.²⁶ The MEC has been updated periodically since then and has served as the basis for the energy conservation provisions of building codes adopted by about half the states.

In 1992 the MEC received the endorsement of the federal government in the Energy Policy Act (EPAAct).²⁷ This requires states to review their residential building codes and determine whether to revise them to incorporate the MEC. EPAAct also requires any new home financed with a federally insured or guaranteed mortgage to comply with the MEC. Although EPAAct includes several sections authorizing grants to tribes for energy projects, the sections dealing with the MEC do not mention tribal governments. Federal funding has been provided to a private organization, the Building Codes Assistance Project, to help states and local governments review their building codes, but this group has not yet reached out to tribal governments.²⁸

The Department of Housing and Urban Development and the Department of Energy (DOE) are the federal agencies that have provided assistance to non-federal governments to work the MEC into their building codes. Unfortunately, these agencies appear to have overlooked tribal governments. Most of the homes that have been built in Indian communities over the last three decades have been made possible by federal funding, mainly through HUD and somewhat through the BIA. HUD and BIA regulations have recognized tribal authority to enact and enforce building codes, but these agencies have not provided much assistance to tribes to incorporate energy efficiency into them.

The Native American Housing Assistance and Self-Determination Act (NAHASDA) of 1996 overhauled HUD's Indian housing program by creating a block grant program for Indian housing and

eliminating tribal eligibility for a variety of HUD programs.²⁹ The new program includes no express incentives for energy efficiency in buildings. In addition to the block grants, NAHASDA includes some provisions intended to help tribes and their members gain better access to private mortgage markets. (Standard home mortgages are anything but the standard in Indian Country, largely due to the trust restrictions on the alienation of Indian land, which make it complicated for lenders to enforce agreements; as discussed later, a transaction known as a leasehold mortgage can overcome this problem.)

The lack of attention to MEC compliance in NAHASDA creates another obstacle to Indian access to private mortgage markets, since federally insured mortgages now require MEC compliance. An unintended consequence of the new Indian housing program, coupled with the lack of attention to energy conservation in the new law and on the part of federal and tribal officials administering it, may be that new housing in Indian Country will be less energy-efficient than anywhere else the federal government helps families buy homes.

Tribal governments can avoid this. They do not need the federal government's permission or encouragement to work the MEC into tribal building codes or to go beyond MEC's minimal requirements. For example, a tribal building code in a northern climate might require superinsulation. Where winter sunshine is abundant, a code might require each new home to provide a certain percentage of its heat through solar design features and to incorporate a minimal amount of thermal mass for heat storage. A tribal land use planning code might require consideration of solar orientation for new buildings.

At least two major obstacles impede tribal governments from enacting such innovative building codes and pursuing related policies. First, the limited amount of federal funding for Indian housing coupled with the need for adequate housing creates a strong incentive to minimize the initial cost per housing unit -- a split incentive in which tribal housing authorities make the decisions, with home buyers and tenants bearing the costs of heating and cooling.

Second, tribal governments lack access to technical assistance for energy conservation and renewable energy, in part because much of this funding by the federal government has been provided through state government agencies and educational institutions that lack a mandate to reach out to Indian Country. The most significant example of this omission may be the State Energy Program administered by DOE. Its regulations do not even mention Indian tribes or reservations, let alone include any requirements that states receiving federal assistance direct any of it to Indian Country.³⁰ And, of course, no counterpart federal assistance program exists for Indian Country.

This is a familiar pattern for federal assistance programs administered through the states. Some states do a reasonably good job in making sure that some assistance under federal programs reaches Indian communities, but a more equitable share tends to reach Indian Country if the federal regulations impose some requirements for this, as in the Low-Income Weatherization Program administered by DOE and the Low-Income Home Energy Assistance Program, administered by the Department of Health and Human Services (HHS).³¹

Obstacles can be opportunities, of course. NAHASDA includes a rather open-ended authorization for tribal housing authorities to include "model housing activities" in their Indian housing plans, which presumably could cover a range of energy conservation and renewable energy activities. Creative tribal officials and staff might find ways to make nonfederal money available for investments in energy conservation and renewable energy. On the other hand, if state and local governments get federal help to upgrade the energy conservation provisions of their building codes, why shouldn't tribal governments also receive such help?

Electric Power A Multitude of Possibilities

Electricity offers a wide range of options for tribal governments that want to promote the use of renewable energy. Tribal initiatives in the electricity arena should be seen in the context of the sweeping changes that are taking place in the U.S. electric power industry.³² As the third kind of sovereign in our federal system, tribes can help shape these changes. And since they are frequently overlooked by federal and state policymakers, they may find that federal legislation or economic forces beyond their control have foreclosed some options unless they become more actively involved.

Within the existing legal framework and market structure, some options that tribes might pursue include choosing to buy electricity only from power companies and independent power producers that have demonstrated a commitment to renewable energy systems; developing tribally owned renewable energy systems, both to meet the needs of tribal facilities and to sell power over the grid; and establishing tribal electric utilities and energy service companies. Other options could be fashioned, but these three suggest the possibilities.³³

Tribal Government Choices in Buying Electric Power

In some parts of Indian Country, tribal government programs constitute a major portion of the local economy. Many reservations have little or no private sector, and most employed people work for tribal government agencies. In other areas, especially those with successful gaming facilities, tribes have become powerful forces in their local and regional economies. In either case, a tribe may have enough bargaining power that electric power companies and independent power producers would compete to win long-term contracts to serve it.

Such a transaction will be easier in states that allow direct contracting between suppliers and retail customers, and the number of such states will likely increase in coming years. But sovereign tribes can fashion ways to make such purchases lawful even in the absence of state-sanctioned retail access. For example, North Dakota's Spirit Lake Sioux Tribe (formerly known as the Devils Lake Sioux Tribe) requested an investor-owned electric utility, Otter Tail Power Company, to provide power to a tribal business located on trust land within the reservation, even though under state law the land at issue fell within the exclusive service area of Baker Electric Cooperative. After the North Dakota Supreme Court ruled that the N.D. Public Service Commission had exclusive regulatory jurisdiction over the entire reservation, the tribe promulgated its own regulations, asserting that it had exclusive authority to regulate electrical services on the reservation.³⁴ The federal courts ruled that the tribe has authority to regulate electric service only to tribally owned businesses located on trust land, but that otherwise the N.D. Public Service Commission has regulatory jurisdiction.³⁵ The federal courts are currently reviewing the issue of whether this tribe has similar authority over electric services to homes located on trust land and to a school it operates that is owned by the BIA on trust land.³⁶

Advocates of direct retail access generally argue that increasing competition between electricity suppliers will lower prices for consumers. Some skeptical environmentalists and renewable energy advocates counter that marketplace competition tends to ignore the "external" costs of individual purchasing decisions, such as the environmental and social costs of fossil fuels. They suggest that policymakers should therefore structure a retail market so as to reflect the benefits of renewables and the costs of nonrenewables. One strategy under consideration in various utility industry restructuring proposals is a concept called the "renewable portfolio standard." This would require companies selling power in a competitive market to ensure that a percentage of the power sold be produced from renewable sources.³⁷ Tribes purchasing large blocks of power could establish their own policies favoring the use of renewables, including but not limited to a renewable portfolio standard.

Generating Power with Renewable Energy

Perhaps the most obvious option for tribes wishing to pursue renewable sources of electric power is to develop their own facilities. A substantial number of such projects now operate in Indian Country. Most feature relatively new technologies, but some involve quite an old one -- hydroelectric dams. In a few cases tribes have operated hydropower projects for many years, and at least one tribe has recently taken over the operation of an existing hydropower dam.³⁸ Some tribes have become involved in relicensing matters before the Federal Energy Regulatory Commission; others whose reservations have existing dams may want to consider filing competing applications as these come up for relicensing.³⁹

Several renewable projects have received financial assistance from DOE pursuant to the Indian Energy Resource Development Program authorized by Title XXVI of the Energy Policy Act of 1992.⁴⁰ Projects assisted in fiscal years 1994 and 1995 include the use of photovoltaics for pumping water on the Ute Mountain Ute Reservation in Colorado and the Hualapai Reservation in Arizona, utility-scale wind turbines on the Blackfeet Reservation in Montana and Spirit Lake and Turtle Mountain Reservations in North Dakota, and hydroelectric projects sponsored by the Agdaagux Tribe and Native Village of Chignik Lagoon in Alaska.⁴¹ In addition, this DOE program aided some feasibility studies and resource assessments for projects planned by a number of other tribes, including biomass cogeneration sponsored by the White Mountain Apache Tribe in Arizona and the Keweenaw Bay Indian Community in Michigan.

DOE administered funds through the Indian Energy Resource Development Program as a competitive grant program for tribes in fiscal years 1994 and 1995. In fiscal years 1996, 1997, and 1998, practically all the appropriated funding was congressionally earmarked for specific tribes.⁴²

In the absence of funding sufficient to administer this grant program in a competitive fashion (or without enough political influence to secure earmarked funding for specific projects), tribes wishing to sponsor renewable energy projects can use some of the same financing options available to the general public, or they can fashion their own creative strategies using their tribal lawmaking powers. (A few financing options are discussed later in this paper.)

However the tribe finances a project's capital investment, the project must be designed and the financial transactions arranged so that the project pays for itself over its useful life through the power it generates. One way to lock in a financial return on such an investment would be to contract with an electric utility to sell the output. But in an era of industry restructuring, this may be undesirable or impossible. Another option would be to build and finance such facilities through joint ventures with companies experienced in bringing independent power projects into operation.

Tribes may be able to realize a greater rate of return if they design projects so that a major part of the output is used on the reservation in tribally owned facilities or in enterprises in which the tribe has an interest. In general, if you sell power at wholesale rates and buy at retail rates, you can realize more value from a project if you use the output to meet your own needs (although as the industry goes through restructuring, generalizations such as this may not apply to specific projects). The Spirit Lake and Turtle Mountain wind power projects fit this model, providing power for a casino and a water treatment plant, respectively.

Although the return on investment for a particular project may be higher if the output is used for a power load on the reservation, off-reservation markets are potentially much larger. Electric power generated by renewables on reservations might have some real advantages in such markets, not least of which are the marketing synergies possible owing to the vague but positive image many Americans have of renewable energy and Indian culture.

Electric Utilities and Energy Service Companies

As noted earlier, a small number of tribes have operated their own electric utilities for many years. Recently quite a few others have reportedly investigated this option.⁴³ The EAct of 1992 encourages tribes to establish electric companies by authorizing DOE to provide grants and loans as well as technical assistance to tribes for "vertical integration projects" to develop the energy resources of Indian Country, expressly including solar and wind energy and the generation and transmission of electricity.⁴⁴ EAct also authorizes grants to tribes for help in the development and enforcement of tribal laws and regulations governing energy resources. The EAct directs the Secretary of the Interior to administer this program, but Congress has never appropriated any funds.⁴⁵

What can tribes do in the absence of federal funding for these provisions of EAct? Among other things, they must look closely at the cost-effectiveness of specific proposals and find ways to secure private investment capital. (Some options are discussed later.) They also need to pay attention to the changes occurring during restructuring of the electric utility industry. Where tribes plan to capitalize tribal power companies with revenues from renewable energy power plants, they need to have reasonable assurances that changes in the industry will not undercut the financial viability of projects.⁴⁶

In conjunction with establishing a tribal power company, a tribe can establish a separate regulatory institution with authority over the rates it charges.⁴⁷ An alternative model is that of municipal electric utilities, which operate to serve the public interest rather than to produce profits, and which typically set their own rates. Either way, rate structures can be used to encourage both energy conservation and passive solar design and to discourage some kinds of electric space heating. Time-of-day rates can have these effects.⁴⁸ In this case, consumers are charged premium rates during peak demand periods and discounted rates during off-peak periods. The premium peak-load rate discourages the use of standard electric space heating but encourages the use of off-peak power to charge up thermal mass -- such as hot water pipes embedded in a mass floor. Passive solar design also uses thermal mass. With time-of-day rates, homeowners can charge a mass floor with solar heat on sunny days or with off-peak power on cloudy days.

Tribal leaders should know, however, that EAct's endorsement of vertical integration for Indian Country is somewhat at odds with trends in the electric utility industry (or at least with much of the rhetoric about restructuring). In some ways the industry is moving toward three different kinds of utilities: power producers, transmission companies, and distribution companies. The industry has also seen the rise of private companies that fit certain niches that either are not open to power companies or that leave room for competition. Independent power producers fit one such niche. Energy service companies, which help clients plan and carry out energy efficiency measures, fill another one. In addition to technical expertise, some energy service companies also provide financing; they may take payment as a percentage of energy savings realized.

Tribal governments can help shape the restructuring debate by focusing on how the various entities that make up the electricity industry serve reservation communities and by using their sovereign powers to fill any remaining unmet needs. The range of options is wide open. One possibility at the modest end of the spectrum would be to expand the capacities of a tribal weatherization program and create ways to make its services available to families not eligible for the federally funded program as well as to businesses, community organizations, and others. Another prospect might be the creation of a tribal power company and the legal infrastructure to regulate it or otherwise ensure that its operations serve the interests of reservation communities. A third option would be to create a tribal power company that would produce power with renewables, sell the power to off-reservation markets, and use some of the revenue to finance the installation of dispersed renewables for reservation families and communities.

Support for Private Renewable Energy Enterprises

Although many Indian communities lack robust private sectors, exceptions exist. One private renewable energy enterprise receiving moderate media coverage is Native SUN/Hopi Solar Electric Enterprise, based in Hotevilla on the Hopi Reservation in Arizona.⁴⁹ Started in 1988 by the Hopi Foundation, this three-person nonprofit company installs photovoltaic systems on the Hopi and Navajo Reservations. It also helps arrange financing and has established a revolving loan fund. By mid-1997, Native SUN/Hopi Solar had installed 320 PV systems.⁵⁰

Native SUN does not depend on government support, either federal or tribal. This may well be a major reason for its success. On the other hand, if a tribal government were to provide some support by, for example, adding money to the loan fund or creating a tribal loan fund to complement Native SUN's, this might help many more families afford PV systems. The number of families in Indian Country interested in owning a photovoltaic system may be far larger than can be served by the three-person staff of Native SUN.⁵¹ This is a model that should be replicated, but it could be improved.

Roles for Educational Institutions

Tribal colleges and other educational institutions based in or serving Indian communities can play a variety of roles in promoting renewables in Indian Country. In particular, they can increase knowledge about locally available renewable resources, improve local technical capacities, and explore financing mechanisms -- three of the four critical needs identified earlier. To fill these needs, tribal colleges and other educational institutions need only carry out their educational missions. Perhaps not so obviously, tribal colleges also can contribute to meeting the fourth critical need: political will. They can do this by sponsoring community education programs to help people in Indian communities understand the interactions among energy, environment, and economic development, and to explain the role that renewables can play in sustainable economic development.⁵²

Tribal educational institutions also can showcase energy efficiency and solar design in school facilities -- a wonderful way for communities to see how renewable energy works in everyday life. Unfortunately, many school buildings throughout Indian Country are far from energy-efficient. Although DOE's "schools and hospitals" program undertook energy audits for many schools operated by tribes and by the BIA in Indian Country, anecdotal evidence suggests that not much has been done in many cases to conserve energy because, for one reason or another, funding was not available.⁵³ Here is another example of the gap between what is and what could be in Indian Country.

Indian Expertise in Developing Countries

Many developing countries have little hope of making electric power available to rural communities except through the use of dispersed renewable energy systems. These communities provide an enormous potential market for such systems. Where people want renewable power, they will have to overcome a range of problems centering on the four critical needs mentioned earlier. Over the next several decades, many interests will converge to address these needs, in part driven by the need to limit carbon emissions from human activities, the main culprit in climate change. Industrial countries will insist that developing nations share in limiting emissions, and developing nations will demand help in gaining access to energy technologies to do so.

Indigenous peoples inhabit the rural areas of many developing countries. Indian tribes and tribal colleges in the United States may be particularly well suited to transfer renewable energy technologies to indigenous communities, in large part because of a sense of common experience and, especially with respect to Indian communities in Central and South America, a measure of shared cultural values. These factors can build trust, an important factor in introducing new technologies. The experience of Native SUN/Hopi Solar Electric Enterprise suggests that tribal

ventures could be well received in overseas indigenous communities. Native SUN receives Indian visitors from Central and South America, and they have put on workshops as far away as Ecuador.⁵⁴ In the coming decades, tribal ventures that provide technology transfer services could find themselves in high demand.

Tribes also could pursue more conventional ways of entering international markets for renewable energy products and services. For example, tribally owned business enterprises and enterprises owned by Alaska Native corporations generally qualify for the minority small business program administered by the Small Business Administration, commonly known as the "Section 8(a) program."⁵⁵ Business entities with 8(a) status can obtain contracts with federal agencies without competition or in a competition limited to 8(a) entities. Tribally owned 8(a) firms working in renewable energy could use this status to obtain contracts with such federal agencies as the U.S. Agency for International Development. They could enter into joint ventures with companies that manufacture products such as PV panels and wind power equipment. Such joint ventures could create employment opportunities for tribal members, generate income for tribal business entities and their joint venture partners, and help joint venture partners expand their shares of overseas markets.

Partners in joint ventures with tribal companies will realize financial and competitive benefits common to partnerships with 8(a) firms generally. Yet tribally owned business entities differ from typical 8(a) firms. By locating manufacturing facilities on tribal trust land and structuring joint ventures carefully, tribes could bring some significant advantages to such undertakings. Some of these potential advantages are discussed in the next section.

PART III: FINANCING ISSUES UNIQUE TO INDIAN COUNTRY

For renewable energy to be widely used in Indian Country, tribes and other project sponsors must attract private investment capital. Unfortunately, banks and other institutional lenders resist loaning money to reservation Indians for even standard investments such as home mortgages, and are even more reluctant to put their money into reservation projects that run more substantial risks. Yet some tribes and investors have found ways to work together. This section discusses a few of the commonly cited obstacles and some ways of dealing with them.⁵⁶ It also notes a few opportunities that are unique to Indian Country projects.

Obstacles to Transactions and Some Solutions

Two of the most significant obstacles to conventional lending transactions in Indian Country are: (1) lenders' need to be able to enforce agreements; and (2) their need to protect their investments in the event of default. Other obstacles may arise as well, such as the lack of a regulatory infrastructure, uncertainty regarding the applicability of federal and state laws, some tribal officials' unfamiliarity with business practices, some tribal leaders' reluctance to draw lines between business and politics, and businesspeople's unfamiliarity with tribal cultural values. Some of these obstacles can be addressed through the measures taken to deal with the two needs discussed below.

Lenders' Need for Enforceable Agreements

As sovereign governments, tribes have sovereign immunity from lawsuits, which means that they cannot be sued without their consent. As a result, lenders may fear that they will be unable to enforce contracts.

Tribes and lenders can deal with this in many ways. A tribe can waive its sovereign immunity for the limited purposes of the particular transaction. Alternatively, it can carry out the transaction through a tribal business entity legally distinct from the tribal governing body, which either does not have sovereign immunity or which has been vested by the tribe with only limited sovereign immunity. The

range of tribal business entities includes tribal government corporations chartered under tribal law, tribal corporations chartered by the federal government under section 17 of the Indian Reorganization Act, and relatively independent tribal government agencies such as utility authorities and housing authorities.⁵⁷ Such entities can generally be sued in tribal courts and in some cases in federal courts. Another kind of entity that many tribes use is generically known as a "tribal enterprise." In many cases these have no legal existence separate from the tribe itself, and as such generally share in the tribe's sovereign immunity unless a valid waiver has been executed.

Lenders' Needs for Security Interests

Waiving immunity so that a lender can enforce an agreement in court represents only a threshold issue. A conventional lender also wants some form of collateral or security so that if the deal does not work, the lender can recover some of the money at risk or take possession of some property that can be converted into money.

In non-Indian America, the most typical way of securing a loan to buy a home is a mortgage, which gives the holder of the mortgage the right to take possession of the property in the event of a default. As noted earlier, because Indian land is held in federal trust status (or otherwise subject to federal restraints on alienation), a typical mortgage cannot be used for Indian land. Many years ago, however, the leasehold mortgage was developed as a solution to this problem. Federal law authorizes leasing Indian land for a variety of purposes, and the leasehold interest can be subject to a mortgage. Under this arrangement, the holder of the mortgage can take possession of the leasehold on default. At the expiration of the leasehold interest, the property reverts to the original owner unless the lease is renewed. The leasehold mortgage has been used for several decades in financing federally assisted home construction in Indian Country, and it could be an appropriate mechanism for financing investments in many kinds of renewable energy properties.

Another approach to providing a lender or investor with security is to pledge some particular source of funds or property as collateral. Some banks have accepted a security interest in gaming revenues, for instance.

Unique Methods of Financing Projects

For proposed renewable energy projects, some of the financing mechanisms used elsewhere in the country may work in Indian Country, but some standard options present complications. One example is bond financing. Pursuant to the Indian Tribal Government Tax Status Act of 1982 to the Internal Revenue Code, tribes have the authority to issue tax-exempt revenue bonds to finance "essential governmental functions."⁵⁸ This provision has been implemented by regulations that leave it unclear whether the Internal Revenue Service (IRS) would treat bonds for tribal renewable energy projects as "essential governmental functions," so each such project may need a ruling from the IRS.

Some options are unique to Indian Country. Some tribes have revenues from gaming or from sources such as judgments against the United States. In this case, if they do not have locally available renewable resources, tribes could choose to invest in projects on other reservations. A variety of federal assistance programs can be used to help finance projects, some of which are unique to Indian Country, such as the Social and Economic Development Strategies grant program administered by the Administration for Native Americans in HHS. In addition, the BIA administers a loan guarantee program for economic development projects.⁵⁹ Of course, the availability of funding for such programs depends on congressional appropriations.

Another arrangement that may be unique to Indian Country makes use of the tax status of tribal governments. Tribal governments and tribal corporations chartered under section 17 of the Indian Reorganization Act are not subject to federal income tax.⁶⁰ Non-Indian entities doing business on

trust land are, of course, not exempt. A non-Indian entity carrying out a joint venture with a tribe may be able to reduce its taxable income by entering into a management agreement with the tribe or tribal corporation instead of a lease.⁶¹

One approach to investing in Indian Country that can be used to clarify the regulatory environment might also generate tax benefits for investors. In Indian Country, the authority of tribal governments is least subject to challenge on lands held in trust; for lands that are not in trust status, assertions of regulatory authority by a state are more likely to be sustained. If a site desirable for renewable energy development is in private hands, the non-Indian joint venture partner could purchase it and then donate it to the tribe, with the understanding that the tribe will ask the BIA to accept it into trust status. The donation would be tax-deductible, and would help the joint venture partner build an on-going relationship with the tribe or tribal business entity engaged in the project.⁶² The project might be structured in any number of ways. For example, it could be carried out by a tribal business entity on land leased to the entity, and if the joint venture partner contributes additional funds, that capital could be secured by a leasehold mortgage.

PART IV: RECOMMENDATIONS

What The Federal Government Can Do

The federal government ought to play an active role in bringing renewable energy to Indian Country. Specific recommendations include:

- * Evaluate federal Indian policy comprehensively: The federal agencies responsible for providing energy conservation and renewable energy assistance to state and local governments (DOE, HUD, and other agencies such as the Rural Utilities Service in the U.S. Department of Agriculture) should review their programs from the last two decades and determine the extent to which tribal governments and reservation communities have been included. Simultaneously, appropriate members of Congress might request an investigation by the General Accounting Office. The review should consider various mandates and initiatives for conserving energy and using renewables in federal facilities, since many tribal government programs operate in buildings owned or constructed by the Bureau of Indian Affairs or Indian Health Service.

- * Fund provisions now in place: The federal government should demonstrate its support for tribal development of renewable energy resources through increased funding for the tribal provisions of the Energy Policy Act of 1992. This should include two measures currently receiving no funds at all: the program to be administered by the Department of the Interior to provide assistance to tribes, including help in developing codes and regulatory programs, and the Indian Energy Resource Commission.⁶³ The mandate of the Commission should be modified, however, to expressly include renewable energy resources and energy conservation.

What Tribes Can Do For Themselves

This paper has presented a number of options for tribes to pursue in order to increase the use of renewable energy and energy conservation in Indian Country. Tribal governments should consider the following options:

- * Building codes: With or without Federal assistance, tribal governments should upgrade building codes to incorporate energy efficiency and renewable energy. In particular, tribes should adopt the Model Energy Code and land use codes that require appropriate solar orientation of buildings.

- * Buy renewable power: Even without retail wheeling, tribes legally may designate a power supplier for tribally owned businesses on trust land, and they may be able to do the same for homes and some public facilities. Where regulatory conditions allow, tribes should wheel in their power from

electricity providers that rely partially or totally on renewable resources. Tribes might also institute a renewable portfolio standard in their electricity purchases.

- * Sell renewable power: Where possible, tribes should explore ways to install their own renewable generating capacity, either for use on reservations or for sale to utilities and power marketers.

- * Use local educational facilities: Tribal colleges can investigate and disseminate information about local renewable resources, create indigenous technical capacity, and explore possible sources of and structures for renewable energy financing. Tribal colleges can also help spread popular knowledge about the links among energy, environment, and economy, and about the role that renewables can play on Indian lands. Finally, these institutions can be showcases for energy efficiency and renewable energy.

- * Consider exporting Indian skills: Tribal governments or private businesses with experience with renewable energy in Indian Country may be uniquely suited among Americans to pursuing such ventures in developing countries. Such international efforts might take advantage of programs offered by the U.S. Agency for International Development or the Small Business Administration. They might also prove attractive partners or consultants to private-sector or nonprofit entities seeking to promote renewable energy overseas.

- * Develop and disseminate knowledge of innovative financing mechanisms: While tribal sovereignty presents certain obstacles to obtaining financing for projects in Indian Country, mechanisms exist to ensure that investors can enforce agreements and secure their interests. These include limited waivers of sovereign immunity, the conduct of business through various kinds of tribal entities that do not share in the Tribe's immunity, and the use of leasehold mortgages to create security interests in land. Tribes must develop these tools and make potential investors aware of them. Tribes also have unique sources of financing that they should develop, publicize, and exploit for renewable energy projects, such as tax-exempt revenue bonds, gaming revenues, federal grant and loan guarantee programs, and the tribe's own freedom from liability for federal income tax.

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1 U.S. Code, vol. 25, sec. 3504 and 3505.

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2 For this last point, see generally Rebecca Tsosie, "Tribal Environmental Policy in an Era of Self-Determination: The Role of Ethics, Economics, and Traditional Ecological Knowledge," *Vermont Law Review*, vol. 21 (1996), pp. 225, 272-87.

3 For an introduction to renewable energy technologies written for Indian communities, see John Busch et al., *Native Power: A Handbook on Renewable Energy and Energy Efficiency for Native American Communities* (Berkeley, CA: Native American Renewable Energy Education Project (NAREEP), January 1998). NAREEP is a project of the University of California, Berkeley, and the Lawrence Berkeley National Laboratory. For information about NAREEP, contact John Busch, Staff Scientist, Lawrence Berkeley National Laboratory, 4000 Building 90, 1 Cyclotron Road, Berkeley, CA 94720; phone: (510) 486-7279; fax: (510) 486-6996; e-mail: <JFBusch@lbl.gov>.

4 The Task Force for Developing Renewable Energy in Indian Country, *Indian Tribes: Their Unique Role in Developing the Nation's Renewable Energy Resources: A White Paper* (Salt Lake City, UT: Center for Resource Management, January 1997). See also U.S. Department of Energy (DOE), *Title XXVI Indian Energy Resources: A Handbook* (Washington, DC: March 1995). The appendices to the latter include some summary information on the distribution of renewable energy resources in Indian Country; these appendices are also included in the Task Force's White Paper.

5 See Bruce Green, "The Jobs Connection: Energy Use and Local Economic Development," *Solar Today* (May/June 1995), p. 22.

6 See Edward Holt, *Green Power for Business: Good News From Traverse City* (College Park, MD: REPP, July 1997); Edward Holt, *Disclosure and Certification: Truth and Labeling for Electric Power* (College Park, MD: REPP, January 1997); Peter Asmus, *Power to the People: How Local Governments can Build Green Electricity Markets* (College Park, MD: REPP, January 1998). Available at <http://www.repp.org>.

7 See generally Tsosie, *op. cit.* note 2.

8 *Ibid.*, p. 276.

9 See generally Rennard Strickland, ed., *Felix Cohen's Handbook of Federal Indian Law* (Charlottesville, VA: The Michie Company, 1982); Robert Clinton et al., *American Indian Law: Cases and Materials: 3rd edition* (Charlottesville, VA: The Michie Company, 1991); and David Getches et al., *Federal Indian Law: Cases and Materials: 3rd edition* (St. Paul, MN: West Publishing Company, 1993).

10 See David Getches, "Conquering the Cultural Frontier: The New Subjectivism of the Supreme Court in Indian Law," *California Law Review*, vol. 84 (1996), p. 1573. Over the past two decades, many cases in which the scope of tribal governmental authority has been at issue have turned on the application of the "implicit divestiture" rule, a new rule announced by the Supreme Court in a

1978 case (*Oliphant v. Suquamish Indian Tribe*, 435 U.S. 191 (1978)). In *Oliphant*, the Court held that tribes can be divested of certain aspects of their inherent sovereignty by implication -- that is, without any express language in a statute or treaty. Before *Oliphant*, the basic principle held that tribal governments retained all those aspects of their original sovereignty that had not been given up in a treaty or expressly limited by act of Congress. See generally N. Bruce Duthu, "Implicit Divestiture of Tribal Powers: Locating Legitimate Sources of Authority in Indian Country," *American Indian Law Review*, vol. 19 (1994), p. 353. Curiously, the White Paper, *op. cit.* note 4, in its discussion of the inherent sovereignty of Indian tribes, simply ignores the implicit divestiture rule.

11 See generally Strickland, *op. cit.* note 9, pp. 180-206.

12 U.S. Code, vol. 18, sec. 1151.

13 Information derived from U.S. Department of Commerce, *American Indian Reservations and Trust Areas* (Washington, DC: 1996).

14 A federal study published in 1986 presented some of the relevant socioeconomic data, including a national average unemployment rate for reservation Indian males in the 20-64 age group of 58 percent, based on 1980 census data; U.S. Department of the Interior, *Report of the Task Force on Indian Economic Development 5* (Washington, DC: 1986). A more recent source reports the unemployment rate for all reservation Indians as 48 percent in 1989, with the rate on some reservations much higher; Stephen Cornell and Joseph P. Kalt, "Reloading the Dice: Improving the Chances for Economic Development on American Indian Reservations" in Stephen Cornell and Joseph P. Kalt, eds., *What Can Tribes Do? Strategies and Institutions in American Indian Economic Development* (Los Angeles: American Indian Studies Center, University of California, 1992), p. 4.

15 Currently codified at U.S. Code, vol. 25, sec. 177.

16 See generally Judith V. Royster, "The Legacy of Allotment," *Arizona State Law Journal*, vol. 27 (1995), starting first page.

17 Loss of land is but one of the disastrous effects of the allotment era. Elsewhere I have described the laws of the allotment era as constituting "cultural genocide." Dean B. Suagee, "Tribal Voices in Historic Preservation: Sacred Landscapes, Cross-Cultural Bridges, and Common Ground," *Vermont Law Review*, vol. 21 (1996), pp. 145, 153-57.

18 *Alaska v. Native Village of Venetie Tribal Government*, 1998 U.S.L.W. 75038 (Feb. 25, 1998).

19 Council of Energy Resource Tribes, 1999 Broadway, Suite 2600, Denver, CO 80202; phone: (303) 297-2378; fax: (303) 296-5690. See generally Marjane Ambler, *Breaking the Iron Bonds: Indian Control of Energy Development* (Lawrence, KS: University Press of Kansas, 1990). Ms. Ambler is editor of the *Tribal College Journal* at P.O. Box 720, Mancos, CO, 81328; phone: (970) 533-9145.

20 U.S. Code, vol. 25, secs. 2701-21.

21 United Nations, *Energy Issues and Options for Developing Countries* (New York: 1990), pp. 214-16. See also Dean B. Suagee, "Self-Determination for Indigenous Peoples at the Dawn of the Solar Age," *University of Michigan Journal of Law Ref.* (1992), pp. 671, 740-43.

22 See Ralph Cavanagh, "Least-Cost Planning Imperatives for Electric Utilities and Their Regulators," *Harvard Environmental Law Review*, vol. 10 (1986), pp. 299-319.

23 The Wampanoag tribal headquarters, located on the island of Martha's Vineyard, was featured in

Burke Miller Thayer, "A Passive Solar Tribal Headquarters," *Solar Today*, January/February 1995, p. 30.

24 See Kate McQueen, "Promoting Energy Efficiency through Building Codes," *Natural Resources & Environment*, vol. 12 (1997), pp. 122, 124. McQueen notes that home buyers consider energy efficiency important but that they assume new homes are energy-efficient and that they generally lack the expertise, time, and ability to evaluate energy efficiency.

25 President's Council on Sustainable Development, *Energy and Transportation Task Force Report 5* (Washington, DC: undated, but published in 1996).

26 The Model Energy Code is available from the Council of American Building Officials (CABO), 5203 Leesburg Pike, Suite 708, Falls Church, VA 22041; phone: (703) 931-4533. See generally McQueen, *op. cit.* note 24.

27 U.S. Code, vol. 42, secs. 4833-34.

28 McQueen, *op. cit.* note 24, at 125.

29 Public Law 104-330 (codified at U.S. Code, vol. 25, secs. 4101-212). See generally Robert J. Miller and Dean B. Suagee, "The New Indian Housing Act and Some of Its Environmental Implications," presented at the 9th Annual Conference on Environment and Development in Indian Country, sponsored by the American Bar Association Section of Natural Resources, Energy and Environmental Law, Albuquerque, NM, 20-21 November 1997.

30 Code of Federal Regulations, vol. 10, part 420. Similarly, the regulations for the Schools and Hospitals program, Code of Federal Regulations, vol. 10, part 455, include a definition of "Indian tribe" but no provisions to ensure that this assistance reaches Indian Country. The Department of Housing and Urban Development and DOE jointly sponsored the preparation by the National Renewable Energy Laboratory of a guidance document on residential energy efficiency for Indian housing, entitled *Our Home: Buildings of the Land: Energy Efficiency Design Guide for Indian Housing*, HUD-1410-CPD (Washington, DC: March 1994).

31 For DOE program, see Code of Federal Regulations, vol. 10, sec. 440.11; for HHS program, see Code of Federal Regulations, vol. 45, secs. 96.40-48.

32 For an introduction to restructuring issues, see generally Alan Miller and Adam Serchuk, "The Promise and Peril in a Restructured Electric System," *Natural Resources & Environment*, vol. 12 (1997), p. 118. Electric Power Committee, "1996 Annual Report," *Natural Resources, Energy, and Environmental Law: 1996 The Year in Review*, vol. 10 (1997), p. 13, discusses restructuring and explains Orders Nos. 888 and 889 of the Federal Energy Regulatory Commission, which affect the operation of and access to transmission facilities. See also Timothy Brennan et al., *A Shock to the System: Restructuring America's Electric Utility Industry* (Washington, DC: Resources for the Future, 1996). For analysis of restructuring in the specific context of tribal governments, see David Howarth et al., *American Indian Tribes and Electric Industries Restructuring: Issues and Opportunities* (Berkeley, CA: NAREEP, July 1997), available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161, pub. no. LBNL-39804.

33 For a more detailed discussion of these and other options, including the option of a number of tribes joining together to aggregate their demands and thus increase their bargaining power, see Howarth et al., *op. cit.* note 32.

34 Application of *Otter Tail Power Co.*, 451 N.W.2d 95 (ND 1990).

35 Baker Electric Cooperative, Inc. v. Chaske, 28 F.3d 1466 (8th Cir. 1994), Devils Lake Sioux Indian Tribe v. North Dakota Public Service Comm'n, 896 F. Supp. 955 (D.N.D. 1995). In a passing comment on the issue of where to draw the line between tribal and state power, the District Court said, "In a few years perhaps the entire issue will be pass_ in that the probable trend towards the de-regulation of electrical services will make the territorial integrity disputes merely interesting history." 896 F. Supp. at 961.

36 Baker Electric v. Otter Tail Power Co., 24 ILR 2141 (8th Cir. June 23, 1997), remanding to the Federal District Court.

37 See Miller and Serchuk, op. cit. note 32, p. 121.

38 In 1988 the Confederated Salish and Kootenai Tribes of the Flathead Reservation took over the operation of a dam on their reservation formerly operated by the Bureau of Indian Affairs. They accomplished the takeover through a contract pursuant to the Indian Self-Determination Act (U.S. Code, vol. 25, sec. 450 et seq.). Mission Valley Power, a tribally owned enterprise, now operates the dam. This example has limited potential for replication by other tribes as the BIA operates only two other hydropower dams. Telephone conversation with Don Dubay, Director, Mission Valley Power, 18 December 1997.

39 The regulations of the Federal Energy Regulatory Commission (FERC) governing hydropower licenses are mainly codified at Code of Federal Regulations, vol. 18, part 4. The Federal Power Act (FPA), codified as amended at U.S. Code, vol. 16, sec. 791a et seq., was originally enacted in 1920, a period in American history that was one of the low points in federal policy toward Indian tribes. The original law authorized the Secretary of the Interior to insist that hydropower licenses protect the rights of reservation Indians (U.S. Code, vol. 16, sec. 803(e)), but did not anticipate the possibility that a tribe might seek to operate its own project. The FPA as amended and the FERC regulations include no provisions recognizing that tribes as governments might have interests in licensing and relicensing comparable to the interests of state and local governments, nor do tribal governments qualify for the licensing preference that is available to state and municipal governments (U.S. Code, vol. 16, sec. 800(a)). This is a subject that should be explored, but is beyond the scope of this paper.

40 Public Law 102-486, title XXVI (codified at U.S. Code, vol. 25, secs. 3501-06).

41 See Stephen L. Sargent and Ernest J. Chabot, "American Indian Reservations: A Showplace for Renewable Energy," presented at the 1996 Annual Conference of the American Solar Energy Society, Asheville, NC, 13-18 April 1996. The paper summarizes projects selected for assistance through this program. See also DOE, op. cit. note 4.

42 Telephone conference with Stephen Sargent, U.S. Department of Energy, 19 December 1997. In fiscal year (FY) 1994, Congress appropriated \$5 million for this grant program and obligated \$4 million. In FY 1995, Congress appropriated \$1.5 million, subsequently combined with the \$1 million FY 1994 carryover funds. In FY 1996, Congress appropriated \$8.6 million, of which it earmarked \$6.1 million for a transmission line project from a coal-fired power plant on the Navajo Reservation, \$2 million for a hydropower project in Alaska, and \$500,000 for a feasibility study of a coal-fired power plant in Montana. In FY 1997, \$4 million was appropriated, all of which was earmarked for hydropower projects in Alaska. In FY 1998, \$4 million was appropriated, with all but \$100,000 earmarked for hydropower projects in Alaska.

43 For information, contact Intertribal Council on Utility Policy, Box 116, Fort Pierre, SD 57532; phone: (605) 343-6054; fax: (605) 343-4722; Patrick Spears, ICOUP President <MniSose@rapidcity.com>; Robert Gough, ICOUP Secretary <Rpwgough@aol.com>.

44 U.S. Code, vol. 25, sec. 3503(a).

45 U.S. Code, vol. 25, sec. 3504.

46 A 1995 decision by FERC disapproving a plan developed by the California Public Utility Commission is said to have contributed to the bankruptcy of Kenetech Windpower, formerly the world's largest developer of wind power projects and manufacturer of wind turbines; Miller and Serchuk, *op. cit.* note 32, p. 120. Other factors also contributed to Kenetech's demise, but such events recommend caution in planning renewable energy projects.

47 Many tribes have utility commissions that regulate rates for water and sewer services. Tribal legislatures could expand the mandate of such commissions. On a few reservations the BIA regulates electric power rates, which are determined by the BIA Area Director. Code of Federal Regulations, vol. 25, secs. 175.10-12.

48 See Gregory Olson and Dean B. Suagee, "An Analysis of the Impact of Time-of-Day Rates on the Cost-Effectiveness of Passive Solar Heating," in *Proceedings of the Ninth Passive Solar Conference* (1984).

49 See Nancy Cole and P.J. Skerrett, "The Hopi Solar Electric Enterprise," *Solar Today*, September-October 1995, p. 20, reprinted from *Renewables Are Ready: People Creating Renewable Energy* (Order from Chelsea Green Publishing Co., 205 Gates-Briggs Building, P.O. Box 428, White River Junction, VT 05001).

50 James H. Williams, John Elliott, and Trisha Frank, "Good Energy: Native Americans Lead the Way," *Winds of Change*, Summer 1997.

51 One source states that almost 18,000 homes on the Navajo Reservation lack electricity; DOE, *op. cit.* note 4, p. 15. On many other reservations, significant numbers of homes probably lack power as well. Moreover, photovoltaics could serve many remote power loads other than homes.

52 In both 1996 and 1997, NAREEP has organized renewable energy workshops for tribal college instructors. For information on educational programs conducted by NAREEP, contact Vivian Gratton, NAREEP Education Programs Team Leader, 607 Centennial Street, Santa Cruz, CA 95060; phone: (408) 459-8942.

53 The regulations for the "schools and hospitals" program are codified at Code of Federal Regulations, vol. 10, sec. 455. I draw my anecdotal evidence from conversations with many people who work in Indian education. I hope my impression is wrong, but I think it is accurate.

54 Williams, Elliott, and Frank, *op. cit.* note 50, p. 16.

55 See Code of Federal Regulations, vol. 13, part 124, especially sec. 124.112.

56 For a more detailed discussion, see Catherine Baker Stetson, "Overcoming Transactional Obstacles to On-Reservation Lending," and Michael P. O'Connell, "Doing Business with Tribal Governments and Tribal Business Entities," both presented at the 9th Annual Conference on Environment and Development in Indian Country, sponsored by the American Bar Association Section on Natural Resources, Energy and Environmental Law, 20-21 November 1997.

57 For a discussion of different kinds of tribal business entities, see generally O'Connell, *op. cit.* note 56, pp. 18-33. See also Michael W. Cameron, "A Prototypical Economic Development Corporation for American Indian Tribes," in Cornell and Kalt, *op. cit.* note 14, p. 61. Indian

Reorganization Act at U.S. Code, vol. 25, sec. 477.

58 Tax Status Act at U.S. Code, vol. 26, secs. 7871, 7872, 7873; authority to issue revenue bonds at Code of Federal Regulations, vol. 26, sec. 305.7871-1(c), (d). See Thomas M. Disselhorst, "Financing Options for Wind Power Projects in Indian Country," a paper presented at the 8th Annual Conference on Environment and Development in Indian Country, sponsored by the American Bar Association Section on Natural Resources, Energy and Environmental Law, Albuquerque, NM, 7-8 November 1996. The IRS has expressly determined that a number of tribal utilities are subdivisions of tribal government for purposes of federal excise taxes. IRS Rev. Proc. 84-36.

59 Code of Federal Regulations, vol. 25, part 103.

60 Rev. Ruling 94-16, as amplified in Rev. Ruling 94-65.

61 See O'Connell, *op. cit.* note note 56, pp. 36-37.

62 U.S. Code, vol. 26, sec. 7871, providing in part that an Indian tribe shall be treated as a state for purposes of U.S. Code, vol. 26, sec. 170 relating to income tax deductions for contributions and gifts.

63 U.S. Code, vol. 25, sec. 3504 and 3505.