

Renewable Energy (Solar) on Tribal Lands:

The Navajo Nation, Arizona; The Fall River, Oglala Lakota and The Custer Counties, South Dakota; and The Sokaogon Chippewa Community, Wisconsin

Value capture tribal solar projects tap into the vast potential of renewable energy on tribal lands across the nation. Created by Federal and tribal officials working together, they provide new jobs, economic growth, reduced carbon footprint, and greater self-sufficiency—with significant energy savings that are reinvested into tribal community programs. These projects can generate substantial revenue for reservations, they have been described as the “new casinos.”

Financial Need and Indicative Solution

Most Native Americans live in extreme poverty, with high unemployment rates in many tribal communities. Their extractable energy sources were exploited, tribal communities often faced high energy bills, and many homes did not have electricity.

A new, less expensive energy source was needed in the Navajo Nation in Arizona; Fall River, Oglala Lakota, and Custer Counties in South Dakota; and the Sokaogon Chippewa Community in Wisconsin. Since living as one with nature and protecting it are important to Native Americans, it had to be clean, renewable energy. Ideally, the energy source would also create badly needed jobs and tax revenue.

Through strategic partnerships, community solar projects were implemented. Tribal communities lease their land to private companies for a monthly rent, adjusted at least every five years. There can also be additional or alternative arrangements, like bonus/advance payments, in-kind contributions, due-on-sale participation, or tribal ownership options. The standard solar lease is for 30 years, with options for renewal. Tribes need a significant amount of land to create a utility-scale solar project, as well as a nearby transmission line with extra capacity.

Navajo Nation Kayenta Solar Program

The Navajo Nation in Arizona’s Monument Valley, in the State’s northeastern corner, is part of the largest Indian reservation in the United States—with approximately 173,667 total members. Ceremonies and rituals are a major part of the culture, especially ones for healing and maintaining harmony and balance with Mother Earth. While the Nation has a rich heritage, 43 percent of tribal members live below the poverty line.

Partnering with the Salt River Project (SRP) nonprofit utility in 2015, the Navajo Tribal Utility Authority (NTUA) built its first two-phase utility-scale solar plant near Monument Valley. NTUA created a for-profit taxable entity to use Federal solar investor tax credits. They also created a two-year power purchase and renewable energy credit agreement with SRP to fund the program.

The cost for Phase I was \$61 million, with \$55 million for the construction and \$6 million to interconnect the solar farm with the grid. The cost for Phase II was \$42 million for construction.

Phase I began in 2016 to supply electricity to an estimated 18,000 homes in the Navajo Nation. NTUA contracted with Isolux Corsan to create a 27.3 megawatt (MW) solar plant on 198 acres outside Kayenta, Arizona. This included building the solar project and training approximately 200 Navajos in the high-level technical procedures required to assemble and install the plant's tracker and foundation system.

Phase I generated over \$3 million in taxes to the Navajo Nation and the first year's tax revenue exceeded \$200,000. Over 30 years, the project is expected to generate nearly \$7.6 million. At the height of construction, 85 percent of the nearly 300 project workers were of Navajo descent. Many long-term solar and maintenance jobs for Navajo people were also created. Phase I construction costs generated \$5.2 million, and an additional \$15.6 million was created in economic activity, which helped pay for the installation of electricity in Navajo homes.

Phase II, which created 150 temporary jobs for Navajo people and generated \$15.5 million in economic impact, was completed in 2019. During this phase, construction generated over \$3 million in taxes to the Navajo Nation. The first year's tax revenue exceeded \$200,000, with a 30-year total estimated at nearly \$7.6 million. Phase II generated an additional 27.3 MW, totaling 56 MW over both phases—enough to power 36,000 homes.

The electricity generated will stay in the Navajo Nation, and the revenue will help fund the *Light Up Navajo* initiative that brings power to families without electricity. Based on the project's success in providing electricity to 233 families, NTUA created a new goal of connecting 300 families to the power grid. NTUA and the SRP signed a long-term solar confirmation to develop at least 500 MW of renewable energy projects over the next 5 to 10 years.

Lookout Solar Park in Fall River, Oglala Lakota, and Custer Counties

Fall River, Oglala Lakota, and Custer counties are in the southeast corner of South Dakota. Pine Creek Reservation, home of the Oglala Sioux, encompasses all of Oglala Lakota County which, along with Custer County, is the project site. The site is about 80 miles from Rapid City. Oglala Lakota County has approximately 14,177 tribal members, and 54 percent live below the poverty line. Fall River County has approximately 6,713 residents and Custer County has approximately 8,972 residents—including some tribal members. While part of Custer County and 100 percent of Oglala Lakota County are under the jurisdiction of the U.S. Bureau of Indian Affairs (BIA), Fall River County is not.

Upon completion in 2021, the Lookout Solar Park, located on land under the jurisdiction of the BIA, will be the largest solar park in South Dakota. Spanning 840 acres, the 140 MW project will interconnect to high voltage transmission lines under the jurisdiction of the U.S. Western Area Power administration.

Wircon (parent company to Lookout Solar and Wirsol Solar AG) will invest \$115 million in the Park for 500,000 solar panels, an energy storage facility, access roads, underground electrical collector lines, an underground fiber-optic cable, collection substation, operations and maintenance facility, and temporary construction areas. The land is being leased from the Rapp family, members of the Oglala Sioux Tribe, for whom the BIA holds the land in trust. This lease agreement is the first of its kind for the BIA.

Lookout Solar is financing all predevelopment, development, and construction activities. While predevelopment activities will use Lookout Solar's internal funds, construction will be financed with internal funds or a combination of internal funds and third-party sources of debt and equity capital.

During construction, the park is expected to employ 200 to 400 people and, upon completion, will provide long-term job opportunities, including for people living on the reservation through a Tribal Employment Rights Ordinance. The project will also lower tribal energy costs, generate electricity in the Southwest Power Pool (SPP) regional grid, and help SPP operators meet electricity demand in the immediate and surrounding control areas. In addition, it is expected to benefit State, community, and local school districts by increasing business and tax revenue.

Sokaogon Chippewa Community Solar Park

The Sokaogon Chippewa Community is in Nashville, Wisconsin, in the northeast area of the State. Home to the Mole Lake Reservation, approximately 500 tribal members live on the reservation and 1,000 live just outside it. They use traditional methods to harvest wild rice and spear fish. While casino and bingo revenue has enhanced prosperity, 29 percent of the community still live below the poverty line.

To strengthen the community's energy independence and promote impact-free sustainable technologies, the Department of Energy (DOE) awarded a tribal clean energy initiative grant. The funds were intended to help plan and install a community-wide solar system estimated to produce 606 kilowatts (kW) of carbon-free clean energy, which would power 17 tribal buildings and three residential homes.

In 2016, the Sokaogon Chippewa Community collaborated with SunVest Solar as the investor to oversee the use of tax credits and other financial obligations not covered under DOE funding. The project cost was just over \$2.15 million, and the DOE grant provided \$1 million. The community covered the remaining cost of \$1,152,925 and made use of tax credit options as repayment.

The solar installations, completed in 2017, ranged from 5.3 kW to 105.7 kW, including a mix of aluminum rooftop mounting systems and ground mount aluminum racking systems. While preliminary estimates indicated offsets of energy consumption ranging from 3.2 percent to 103 percent, they were calculated to be less after one year.

Solar energy now powers almost 50 percent of the high-energy using buildings on the reservation and generates nearly 7 percent of the total energy load. Over its lifetime, the park will generate over 21 million kilowatt-hours of clean, renewable energy, saving the tribe \$2,041,282 in energy costs.

The park has also lowered the community's carbon footprint, reducing greenhouse gas emissions by 542 metric tons per year, and has cut down other emissions from coal-fired power plants, especially SO₂ and mercury. As a result, the solar park is helping protect sensitive wild rice beds and treaty fishing rights.

Sources:

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