



# Case Study: Aztec Solar Farm

Grid-tied Solar + Storage Project  
City of Aztec, NM



The Aztec project is a grid-tied solar PV + battery storage project owned by the municipal utility for City of Aztec, NM. The ICAST and TBL Fund team helps the City access Federal and State funds authorized by the Bipartisan Infrastructure Law and Inflation Reduction Act, and monetize the investment tax credits. ICAST acts as the project developer, managing the design, procurement, construction, and commissioning of the Project.

## Generation Capacity

- Size of Solar P.V.: 2MWac
- Size of Battery: 2MW; 4MWh
- 1st Yr. Production estimate - 5.375 GWh



## Benefits

- Peak shaving
- Higher penetrations of renewable energy
- Deferral of future transmission and distribution investments
- Reduced line congestion and line losses.
- Energy Reliability and Resiliency
- Energy Self-Sufficiency
- Prevailing wage jobs for the local community
- Apprenticeship opportunities through the ICAST Workforce Training Program
- Utility ownership coupled with access to available incentives allows for the capture of all possible value streams that allow the City to pass the lower costs to their residents.



## Objective

As stated by the Director of City of Aztec Utility Dept, “Stabilize energy costs for Aztec’s 6,000-plus residents and decarbonize energy usage”.

## Challenges and Mitigation

Gaining Town Council Approval - Support from local officials and regulators resulted in not only unanimous approval of the Town Council, but the Council also approved an appropriation of \$2,000,000 towards the Project.

Interconnection Studies of the City-wide distribution system, in parallel with studies being conducted for the solar Project, resulted in some delays. However, System Impact Studies are now moving forward.

Supply Chain Limitations - Solar components and electrical equipment, especially transformers, have 18-24-month lead times. Equipment is to be ordered ASAP, and the selection of EPC is to be made based on price and delivery factors. One EPC bidder has guaranteed deliveries within six months and will meet the domestic content requirements of American Build America Buy America (BABA).

Federal Land Lease - This is under modification due to the addition of storage to the original solar lease.

National Environmental Policy Act (NEPA) Environmental Assessment (EA) - Is required because the Project is located on federal land. Studies can cost up to \$75,000 for a project of this size, and final approval can take 18-24 months. The City has already received its NEPA approval.



## Project Financing

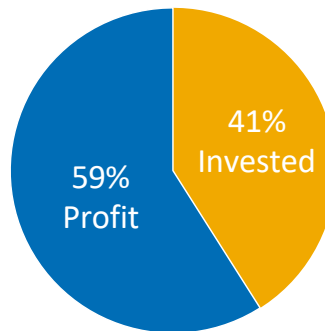
Gap and Construction Financing will be provided by TBL Fund, a nonprofit Community Development Financial Institution (CDFI) certified by the U.S. Department of the Treasury. Other significant funding sources include monetized Investment Tax Credits, the N.M. Dept of Energy, Minerals and Natural Resources (ECMD) Electric Grid Modernization Grant (approved), and all other grants and incentives may be awarded.

## Financial Modeling

Conservative numbers - not to include any ITC low-income or domestic content or any currently or subsequently approved grant funding but did include a 10% bonus tax credit for Energy Community due to the closure of the coal-fired San Juan Generating Station in the area.

## Results:

Financial Feasibility- The positive outcome of two key financial matrices, NPV and ROI, indicate that the Project is highly feasible, and the City should expect to accomplish its financial goals and other benefits once the Project is operational and generating power.



Investment Gain	\$2,839,519.00
ROI	141.98%
Annualized ROI	3.60%
Investment Length	25 years

Size of Solar P.V.:	2,000	kWac	2,400	kWdc
Size of Battery:	2,000	kWdc	4,000	kWh
PPA rate:	\$0.045	\$/kWh	2%	Escalation Rate (%/Year)
Capacity Charge	\$9.00	\$/kW/month	2%	Escalation Rate (%/Year)
First Year Total Savings	\$545,040			
First Year Total Expenses	\$368,626			
First Year Savings	\$176,414			
Total Savings -25 yrs	\$4,839,519			
Investment by Aztec	\$2,000,000			
NPV of Project	\$2,552,266			



## The Partners



**Western  
Area Power  
Administration**

Western Area Power Authority (WAPA) is a four-power marketing administration within the U.S. Department of Energy whose role is to market and transmit wholesale electricity from multi-use water projects. WAPA service area encompasses a 15-state region of the central and western U.S., including more than 17,000 circuit miles of transmission system carrying electricity from 57 hydro power plants operated by the Bureau of Reclamation, U.S. Army Corps of Engineers and the International Boundary and Water Commission. Together, these plants have an installed capacity of 10,504 megawatts. WAPA sells power to preferred customers such as federal and state agencies, cities and towns, rural electric cooperatives, public utility districts, irrigation districts, and Native American tribes.



**Guzman  
Energy**

Guzman Energy LLC -Guzman Energy operates as a multifaceted energy services provider, specializing in purchasing and selling electric power, natural gas, and a range of environmental products and services. The Company markets to utilities, retail providers, and large end users. Guzman Energy operates in the United States, with offices in Florida and Colorado. Guzman Energy is a wholesale power provider dedicated to communities in search of affordable and reliable energy.



ICAST (International Center for Appropriate and Sustainable Technology) - ICAST is a national 501c3 nonprofit with a mission to provide economic, environmental, and social benefits to underserved communities in a manner that builds local capacity. ICAST currently manages US DOE's weatherization program for multiple states and Demand Side Management programs for many utilities, including Berkshire Hathaway Energy, Dominion Energy, Pepco, Ameren, PNM, Ameren Inc., etc. ICAST also develops solar and BESS projects for RECs, Tribes, and rural municipal utilities. Its 125 staff members are adept at leveraging various grants and incentives to facilitate projects.