



Red Antelope Solar PV + Energy Storage

LeChee Chapter Workshop

March 14, 2023



Agenda

- 01 Avantus / NTUA Partnership
- 02 Avantus Overview
- 03 Red Antelope Project Overview
- 04 NTUA Project Benefits
- 05 Workforce Development Benefits
- 06 Additional Project Benefits
- 07 Appendix



01

Avantus / NTUA Partnership

A proven track record on Tribal Lands

NTUA & Avantus have successfully contracted and constructed more solar on tribal land than any other developer

- Avantus is the #1 solar and energy storage developer on tribal lands based on contracted volume
- NTUA is the only developer to have successfully built utility-scale solar projects on the Navajo Nation

Projects Completed or Under Construction	Size (MWs / MWhs)	Status
Kayenta 1 Solar	27 MW	Completed in 2017
Kayenta 2 Solar	28 MW	Completed in 2019
Eagle Shadow Mountain Solar	300 MW	Under Construction, est. completion in Q2 2023
Red Mesa Tapaha Solar	70 MW	Construction Complete, Fully Operational April 2023
Cameron Solar	200 MW	Construction beginning Q4 2023



NTUA and Avantus are ideal partners to co-develop the Red Antelope Solar + Storage project

Each party will leverage its core competencies to co-develop and co-own the Project



- NTUA has sited and permitted land across Navajo Nation for various electric, water, natural gas, solar energy and communications projects
- NTUA has the strong relationships within Navajo Nation and the Bureau of Indian Affairs necessary to execute on this Project
- As the sole developer on the Kayenta 1 & 2 solar projects, NTUA is the only entity to successfully develop / construct a utility-scale solar project within Navajo Nation



- With executed PPA's for the Eagle Shadow Mountain and Southern Bighorn Solar projects, Avantus is the #1 renewable energy developer on tribal lands in the United States
- Avantus has extensive experience developing / constructing large-scale solar projects with over 18 PPA's for projects 100+MW's in size and 5 GW's contracted pipeline in total
- Avantus focuses exclusively on greenfield utility-scale development, which allows our team to tailor projects and associated benefits to meet the needs of individual communities





The NTUA / Avantus partnership will ensure that the LeChee Community benefits from a project built on its lands

02

Avantus Overview



8MINUTE IS NOW



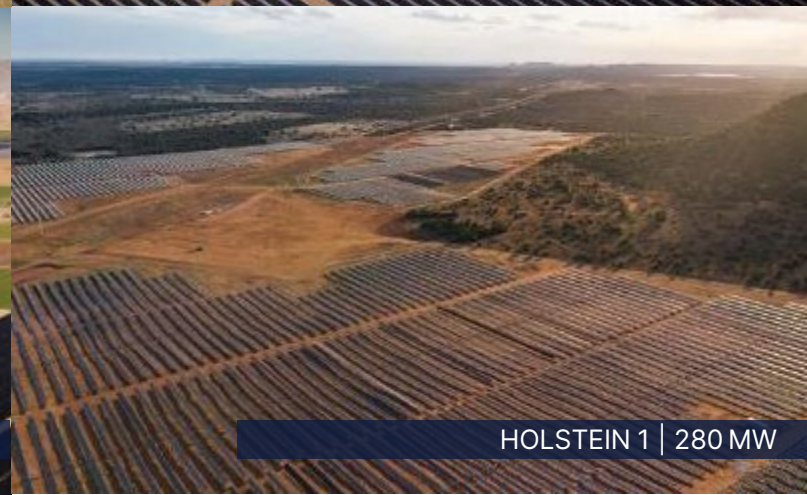
Same team.
Same track record.
Bolder vision.

- Built on 8minute's record-breaking history and expertise
- Reflects our evolution into expanded technologies, products and services beyond solar development
- Models our commitment to advance us all toward a smarter, cheaper, faster, more reliable clean energy future



We've brought online over 2 GW of high-performing solar plants

Our portfolio includes multiple record-breaking endeavors and repeat engagements with all the largest utilities in Nevada and California.



Industry-leading pipeline capable of providing power for over 30 million people

90+

Projects

50 GW

System Capacity

42 GW

Solar

78 GWh

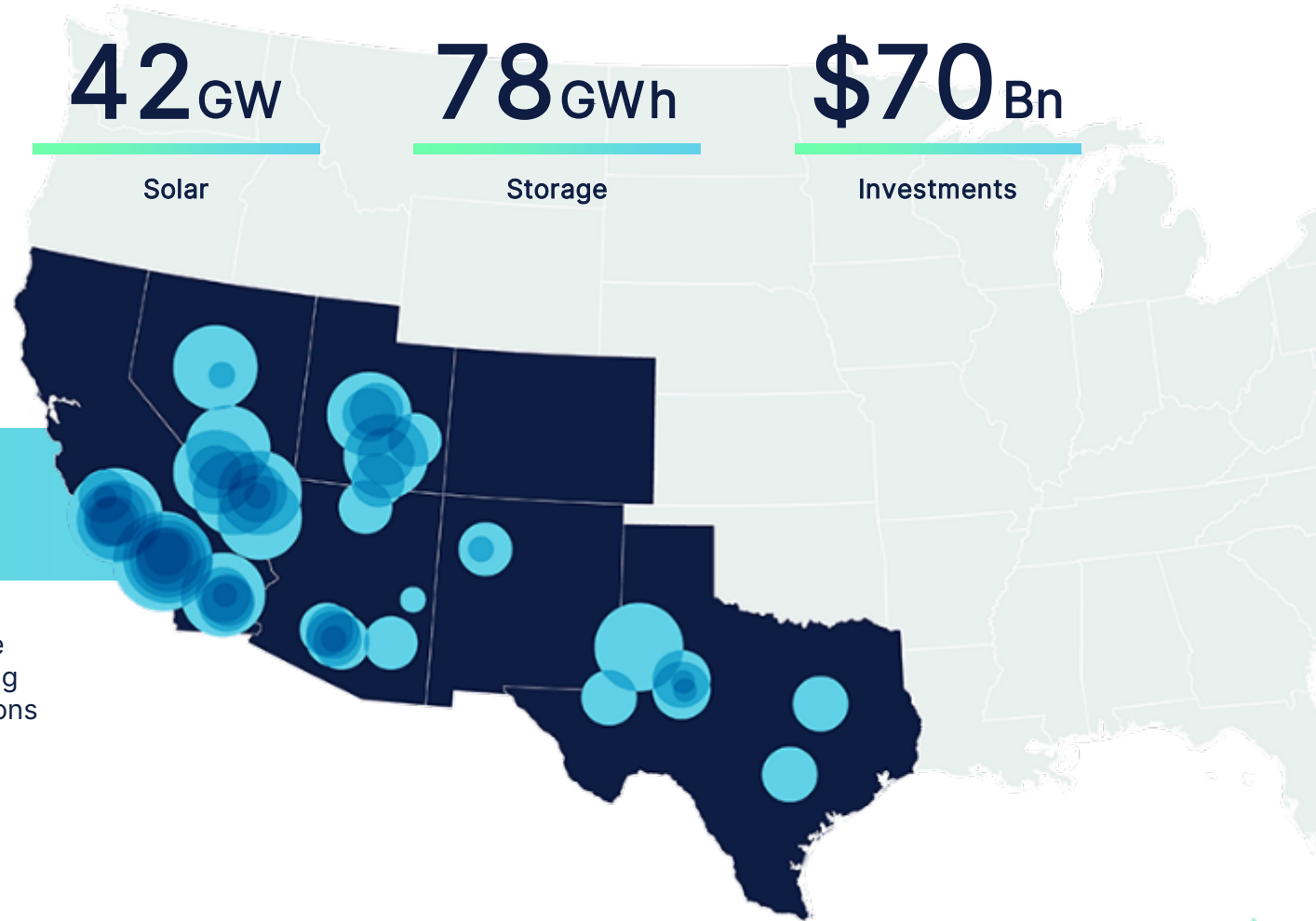
Storage

\$70 Bn

Investments

Power for 30 million people

10% of LA's daytime power is provided by solar plants we've built. Our expanding portfolio of smart power plants will bring low-cost, reliable, and zero-emission energy to tens of millions of people across the Western United States.



Proven track record of successfully partnering with Native American tribes and other communities impacted by coal plant retirement



“I worked on a lot of coal-burners back in my younger days and now this solar [project] is using the sun, so it’s green and is clean work and is good money.”

- Roy Lee Jr., Field General Forman at Eagle Shadow Mountain & Member of the Navajo Nation



“The solar site helps out a lot of people, not just the Tribe, to come out here to work and learn the trade of solar. I would encourage other tribes or other places to build solar.”

- Shane Tom, Forklift Driver at Eagle Shadow Mountain & Council Member, Moapa Band of Paiutes



“This project is going to help us create a better situation for the sustainability of our people and our Tribal lands. Our future is beginning to look brighter after many years of hard work and dedication.”

- Laura Parry, Former Chairwoman, Moapa Band of Paiutes



Avantus partners with local environmental groups in order to drive solar adoption and support thoughtful stewardship of shared resources

SUPPORT FROM LOCAL ENVIRONMENTAL GROUPS

- Mount Signal and Calexico projects received support from Sierra Club, Audubon California, Natural Resources Defense Council and Defenders of Wildlife through Imperial County land use permitting process
- Avantus teamed up with the Sierra Club and the Imperial Valley Community Foundation to establish the Burrowing Owl Stewardship and Education Fund, which funds the habitat protection of the burrowing owl in California
- Avantus and Desert Tortoise Preserve Committee have worked together to protect undeveloped land and to improve tortoise habitat; approximately 1,009 acres are currently under protection



“..Without any legal obligation, 8minute has gone beyond the minimum mitigation requirements and are funding research to understand how the development and operations of solar farms affect adjacent lands.... We thank 8minute for being a responsible solar company with a willingness to work with our mission and goals to help protect the desert tortoise.”

This statement/testimonial was originally published under 8minute. 8minute changed its name to Avantus in September 2022.

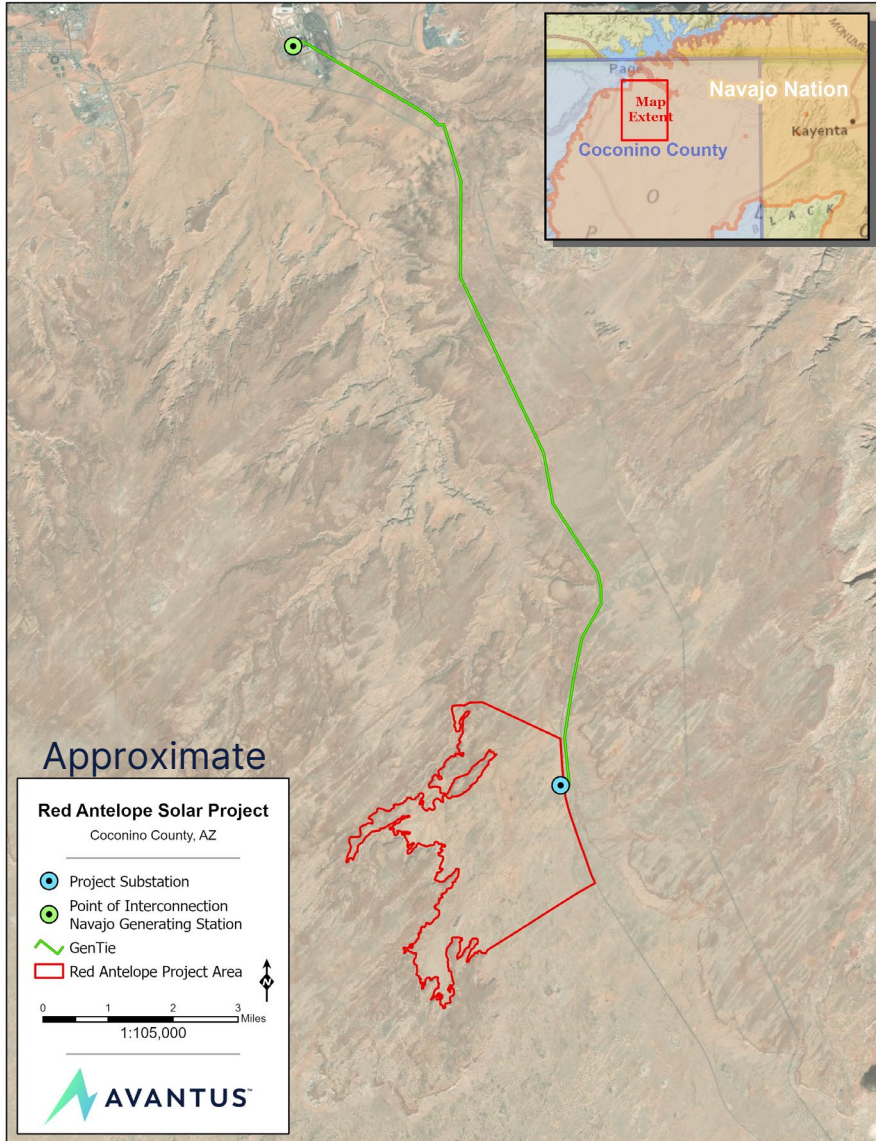
Desert Tortoise Preserve Committee
Tortoise Tracks Newsletter, Winter 2016



03

Red Antelope Project Overview

PROJECT SUMMARY



Red Antelope Solar and Energy Storage

PROPOSED SITE LOCATION

- Between HWY 98 and Route 89, west of the Black Mesa and Lake Powell Railroad in LeChee
- Approximately 12.5 miles south / southeast of NGS

INTERCONNECTION

- 2,000 MW at Navajo (NGS) 500kV Substation
- Most advanced position at NGS, submitted in 2017
- Only project interconnecting at NGS that has completed all required interconnection studies

NTUA CO-OWNERSHIP

- Enables the Navajo Nation to maintain long-term control of the plant
- Excess revenue will be used to keep NTUA electric rates low and to help electrify homes on the Navajo Nation

Avantus and NTUA have taken a proactive approach to informing the community and seeking feedback about the Red Antelope Project

Chapter engagement began in early 2017 and accelerated after COVID-19 restrictions were lifted, including approximately 28 meetings with Chapter leaders and the broader community since mid 2021

June 9, 2021	• Meeting with Lechee Chapter Leadership, after COVID restrictions are lifted
August 9, 2021	• Presentation at Lechee Chapter Meeting
August 19, 2021	• Presentation at Lechee Planning and Zoning Committee Meeting
September 20, 2021	• Presentation at Lechee Planning Meeting
September 27, 2021	• Presentation at Lechee Chapter Meeting
November 10, 2021	• Presentation at LeChee Planning and Zoning Committee Meeting
Dec 2021 - Mar 2022	• Meetings with Grazing Permittees
Apr 2022-Jan 2023	• Chapter Meetings, Open House Events, Sponsored Community Events, Community Office Hour Meetings, Tabling Events



Outreach efforts increased in 2022, and community members showed strong interest in the project

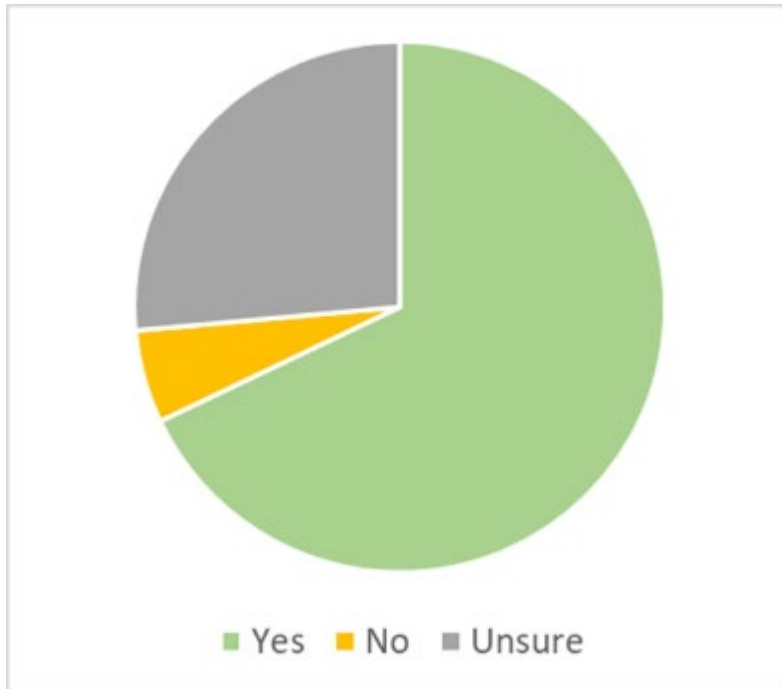
Key activities in 2022 included 3 Community Open Houses with one focused on Navajo Translation, and a Community Survey to better understand the community's interests and concerns

- NTUA and Avantus employees spoke to approximately 100 attendees over 3 days (June 19 & 20th and July 24th)
- Attendees were able to ask questions one-one-one for each topic area
- Most common questions answered:
 - What are the benefits to the local community?
 - What kinds of jobs will there be and how many?
 - How does this help NTUA Customers?
 - How will 8minute and NTUA work with the local community?
- Feedback incorporated
 - Project area was modified
 - Communications simplified for elders where possible
 - Spending more time in community with Navajo Translation



Survey results indicated broad support for the project and detailed the benefits of greatest interest to community members

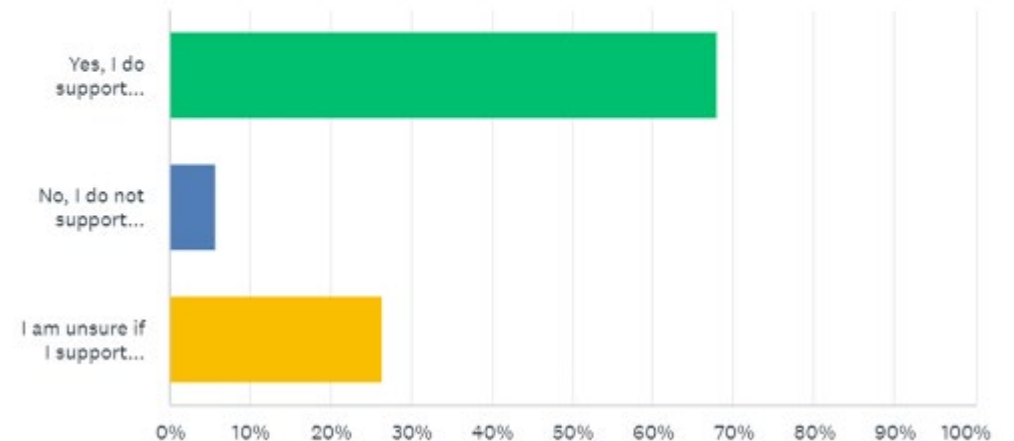
- Community Survey Conducted May-July 2022
- 53 responses, 50 Navajo Nation Members, 32 LeChee Voters
- Survey results presented to chapter and provided publicly on website



Q2

Do you or would you support NTUA Solar in building utility-scale solar projects in your community?

Answered: 53 Skipped: 0



Project benefits for LeChee community

JOBS & TRAINING

- Up to 650 construction jobs and 10 – 20 operations and maintenance jobs
- 10 scholarships + 2 internships annually over the project life (350 scholarships and 70 internships in total)



LOCAL REVENUES

- Navajo Energy Policy Act of 2013 enables chapters to receive a portion of site lease revenue
- NTUA and Avantus will support LeChee being compensated under the Energy Policy Act
- Construction workforce will provide economic uplift for local businesses



ENVIRONMENT

- ~51,000 GWh of solar energy over project life
- Carbon reductions equal to planting 2.3 million trees, or
- Removing almost 225,000 cars from the road every year



04

NTUA Project Benefits

NTUA 5MW Community Solar Project

Benefits to the local community:

- NTUA is looking at building a small scale solar plant that will power the LeChee community and surrounding Navajo communities
- The power created will be used in the LeChee community and surrounding Navajo communities
- NTUA will work with LeChee to create a fund that will:
 - be used to connect homes in the LeChee community to the electric grid
 - Be used to provide credits to LeChee community members' NTUA electricity bill
 - Be used for community projects
- NTUA will work with local community and obtain a chapter supporting resolution and will work with permit holder to obtain consent
- This project is separate and apart from the large scale LeChee solar project with Avantus



Source: Solar Power World



NTUA Partnership

Benefits of NTUA Ownership/Partnership

- Revenue earned on all renewable energy projects will be directly used to electrify homes
- Revenues earned on all renewable energy projects will be given to NTUA and used to keep electric rates stable
- Revenue earned on all renewable energy projects may be used to fund off-grid solar to LeChee community members
- NTUA is requesting a list of all LeChee community members without:
 - Electricity
 - Water and wastewater

REGIONAL UTILITY RATE COMPARISON

as of September 2022

	Residential						
	Electric Summer kWh	Electric Winter kWh	Gas Summer Therms	Gas Winter Therms	Water Gallons 5/8" Meter	Waste Wtr Gallons 5/8" Meter	Tax Rates
Average NTUA Usage	390	580	20	65	4400	4400	
NTUA	\$ 34.61	\$ 48.67	\$ 16.63	\$ 37.72	\$ 35.34	\$ 18.44	6.0%
Page	33.24	46.39	16.87	32.32	17.42	28.58	9.9%
Farmington	52.79	72.66	16.67	27.18	18.00	17.17	8.3%
Gallup	55.63	82.06	16.67	27.18	39.53	32.80	8.2%
APS Flagstaff (Tuba City)	44.38	65.84	16.87	32.32	38.49	23.54	9.2%
APS Winslow (Cameron)	44.38	65.84	16.87	32.32	41.75	25.92	9.4%
Blanding, UT	47.06	65.61	21.51	51.92	26.53	27.50	6.8%
Jemez Mtns (Torreon)	53.55	72.81					6.4%
CDEC (Crownpoint)	66.97	85.47					6.6%
RMP - Utah	45.21	62.36					6.1%
Average Rates	\$ 47.78	\$ 66.77	\$ 17.44	\$ 34.42	\$ 31.01	\$ 24.85	

For Comparison:

An average City's electric system has about 500 customers per mile of line. NTUA's Electric system has 4.06 customers per mile of line.



05

Workforce Development Benefits

Avantus and NTUA are committed to building a skilled local workforce

The Red Antelope Project will Support Skill Development for this Project and Future Projects

- The Project will follow all Navajo employment laws
- Focus on bringing jobs to Navajo citizens through job fairs and media outreach
- Liaise with LeChee chapter on effective workforce outreach strategy
- Select construction partner (EPC) with proven solar experience and strong track record
- Our preferred EPC achieved 85+% tribal workforce on a previous Navajo project

Avantus and NTUA will Focus on Maintaining Strong Relationships Through Construction and Beyond

- Thousands of hours of job training will be made available to employees
- Build trust through our actions
- Open-door policy to promptly address any concerns
- Tribal liaison as part of management team



The Red Antelope Project will generate a significant number of local jobs

Creation of Long-Term Jobs

- Operations and maintenance jobs to support continuous operations of the facility throughout its 35-year project life
- Job opportunities on future solar projects for tribal workers willing to travel

Construction Jobs and Training

- Up to 650 employees are expected during construction
- On-the-job training: previous construction experience is not required
 - Hands-on training on small test facility at the project site
 - Possibility for promotions for high performers
- Development of valuable skills creates opportunities for additional jobs in the growing solar industry



The Project will also result in Scholarships and Paid Internships for community members

Paid Internships

- Two internships every year of the Project's 35-year life (70 total) in roles related to NTUA utility and renewable energy
- Two internships in engineering and project management roles during construction
- Flexible internships enable students to participate during school breaks or part time during the school year

Scholarships

- Ten scholarships every year of the Project's 35-year life (350 total) in a field of study determined by the LeChee community



06

Additional Project Benefits

Avantus – Red Antelope Community Fund

Being a good neighbor means.....

COMMUNITY FEEDBACK

- While engaging the community a common suggestion was the need for local benefits for the project. In addition to the jobs, scholarships, internships, and revenue directly to the Chapter we determined creating a Community Fund in partnership with Navajo United Way would be the best response to this suggestion.



Avantus – In Partnership with Navajo United Way

Being a good neighbor means.....

RED ANTELOPE COMMUNITY FUND

PURPOSE: To create sustainable value for the community with a focus on social, environmental, economic, and other benefits and opportunities important to the community.

AVANTUS

- Provides \$100,00 Annually starting with \$25,000 in 2022 for the life of the project expected to be 35 years
- Help Identify Funding Priorities
- Help Evaluate Short-Term Funding Requests
- Help Establish Grant Criteria, Themes, & Process
- Promote Grant Program and Community Impacts
- Support Navajo United Way in administration of funds
- Report funds distributed transparently

NAVAJO UNITED WAY

- Provides Grant Administration with a 13% administrative cost
- Coordination with Applicants and Grantees
- Review Grant Applications with Volunteer Community Selection Committee
- Assist and facilitate Volunteer Community Selection Committee
- Distribute Awarded Funds
- Provide funding data to Avantus for reporting



Avantus – In Partnership with Navajo United Way

RED ANTELOPE COMMUNITY FUND

PURPOSE: To create sustainable value for the community with a focus on social, environmental, economic, and other benefits and opportunities important to the community.

Focus Areas Eligible for Funding

- Education
- Youth Development
- Capacity Building
- Environmental Stewardship
- Economic Development
- Elder & Aging Services
- Community Development

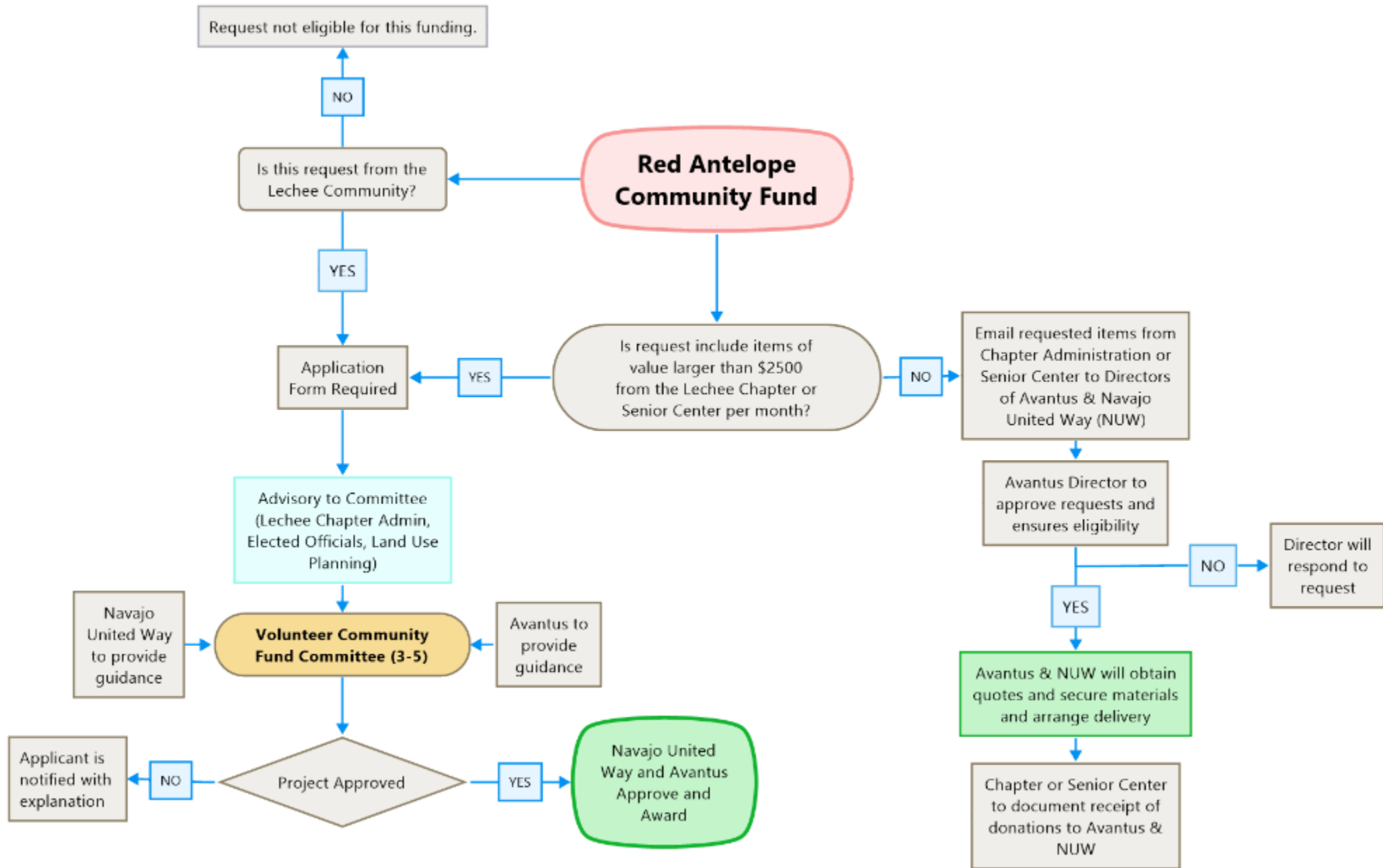
Short Term Funding Examples

- Holiday Events
- School Supply Drives
- Event Sponsorships
- Supplies for programs

Long Term Funding Examples

- Funding-Light Up Navajo
- Training for Entrepreneurs – Dream Catcher Program
- Support for Community Planning





Avantus – In Partnership with Navajo United Way

RED ANTELOPE COMMUNITY FUND – Volunteer Community Fund Committee

- Seeking 3-4 LeChee community members to volunteer for the committee responsible for working with NUW/Avantus in selection of grantees
- Structure of the funding process includes feedback from various community engagement sessions including meetings with the LeChee Land Use Planning Committee and a public meeting specific to seeking feedback on the management and structure of the fund
- Requirements:
 - Must have access to email and internet in order to be able to review applications and communications from the NUW/Avantus team
 - Will need to abstain in the selection of grants if there are any conflicts of interest
 - Those interested will need to provide Name, Address, Email, Phone Number with a short statement of your reasons for wanting to participate
- NUW/Avantus will provide training in the selection approval process prior to selection of grantees



Summary of Red Antelope Project Benefits

NTUA and Avantus Partnership

- Up to 650 construction jobs and 10-20 operations and maintenance jobs
- 10 scholarships + 2 internships annually over the project life (350 scholarships and 70 internships in total)
- Local Community and Tribal Liaison
- 10-20 full time employees
- Ability for NTUA to stabilize electricity rates
- Navajo Nation Ownership in Project
- 5 MW Community Solar Project benefiting community directly
- 5% of lease revenues returned to the Chapter based on 2013 Energy Policy Act
- Red Antelope Community Fund \$100,000 per year for the life of the project (35 years) starting 2023 in pre-development phase



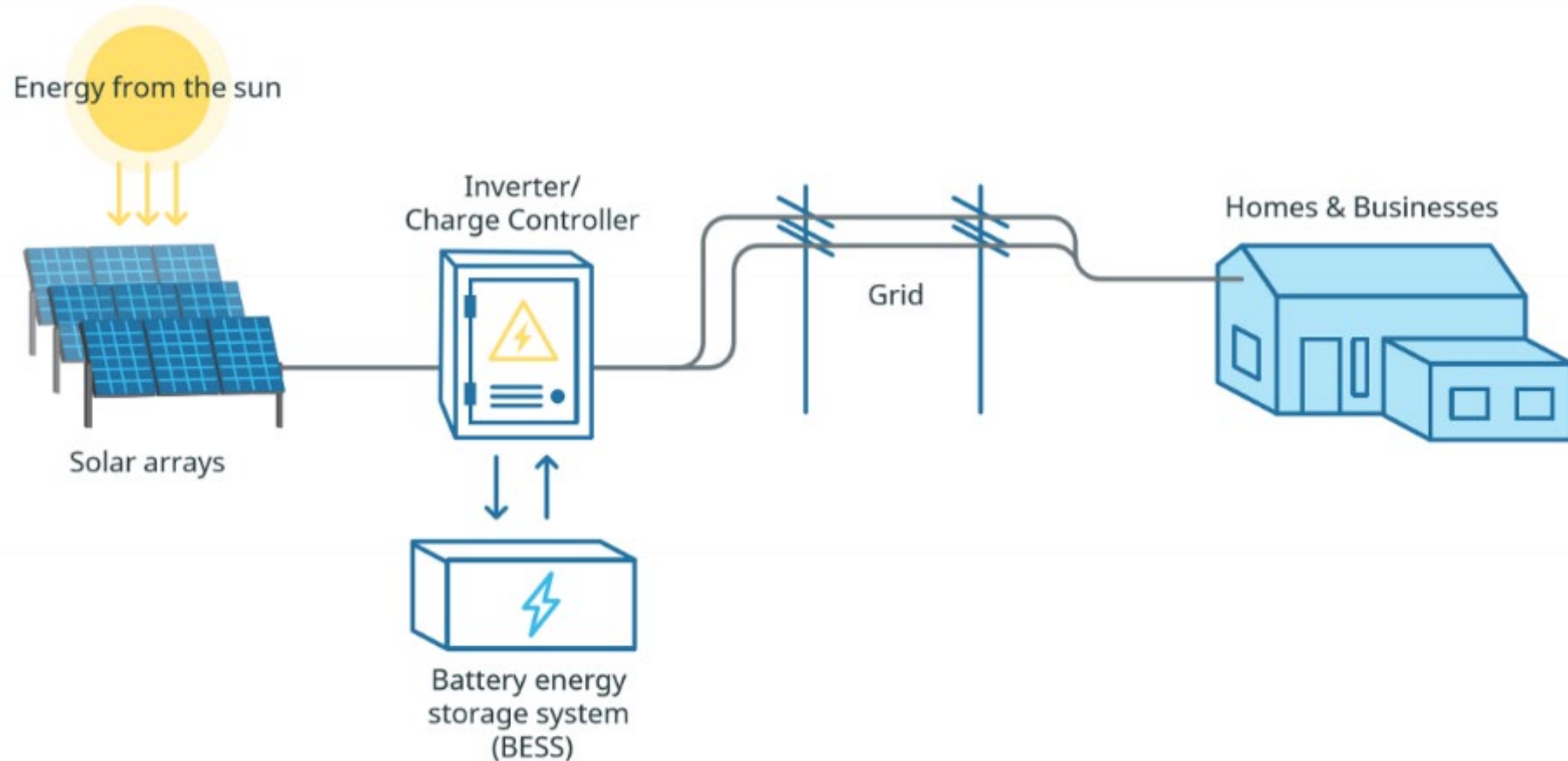
07

Appendix

07.1

Overview of Solar PV & Battery Storage Technology

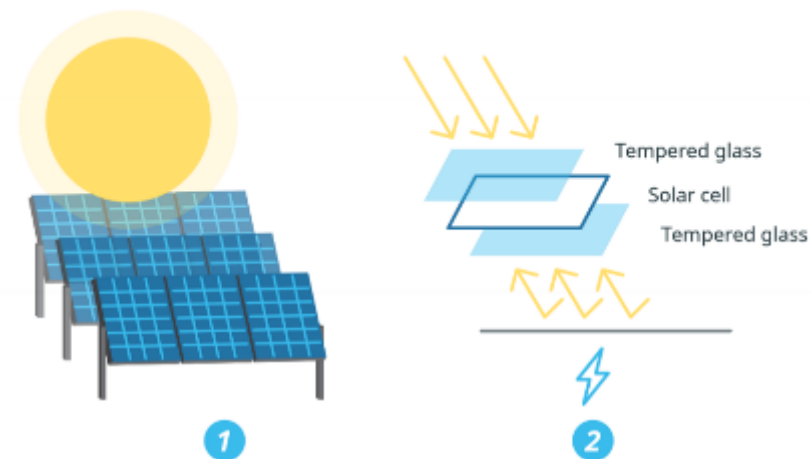
Solar PV panels convert the Sun's energy into electricity, which the transmission system transports to homes and businesses



Avantus deploys state-of-the-art equipment from tier suppliers

PV MODULES

- Avantus will select PV panels or modules with proven reliability to ensure the facility meets production and reliability expectations
- Modules may be either mono-facial or bi-facial
- Modules may use either thin-film, polycrystalline or monocrystalline technologies



1
SUNLIGHT
When sunlight hits a solar panel, photons (particles of energy) are converted into electrons.

2
BIFACIAL SOLAR CELL
Bifacial solar panels produce energy from both sides of the panel, collecting direct sunlight and light reflecting from the ground.

As electrons pass through the cells of a solar panel, they are converted into direct current (DC) electricity.

MODULE CONFIGURATION

- Individual PV panels will be installed on single-axis tracker mount systems using galvanized steel or aluminum
- The panels will rotate to follow the sun over the course of the day
- Panels are expected to remain between 6 and 8 feet high

Avantus smart power plants deliver clean, reliable energy, day and night

Integrates clean energy production and battery storage into one seamless, intelligent system

BENEFITS

- Reliable power at any time of day
- Deliver PV energy when it's needed, rather than on the sun's schedule e.g., deliver PV energy after sunset (or before sunrise)

MAJOR EQUIPMENT

- Lithium-ion batteries within outdoor-rated containers
- Inverters and medium voltage transformers similar to PV



Example Lithium-Ion Battery Racks



Example BESS + PV Project Site

Solar Makes a Good Neighbor

A utility-scale solar facility will generate no emissions or odors, and it will produce limited noise and have a low height profile

SOLAR FACILITY

- Long, continuous rows of solar modules within a perimeter fence will be installed throughout the project site
- The modules are expected to rise no more than 6-10' above ground depending on their angle of rotation
- While visible from the adjacent road, the solar project is expected to have minimal impacts on the visual landscape from a distance



Simulation of solar array



Simulation of view from a road



Simulation of BESS facility for similar project

ENERGY STORAGE AND OTHER FACILITIES

- The battery storage systems are typically housed in either modular metal structures or within a climate-controlled building
- The project may also include an operations and maintenance building with on-site parking

Thank you.



www.avantus.com

www.ntua.com