



Colusa Indian Community Council (CA): Housing Power Project and Solar Canopy Expansion Project

DOE Annual Program Review 2021

Presented by Ken Ahmann



Presentation Outline

- ◆ Summary of Colusa Indian Community
- ◆ Description of Housing Power Project
- ◆ Description of Solar Canopy Expansion Project
- ◆ Colusa Rancheria and Project Locations
- ◆ Project Participants
- ◆ Project Objectives
- ◆ Relevant Project Background
- ◆ Project Progress To Date
- ◆ Contact Information



Summary of Colusa Indian Community

The Colusa Indian Community consists of 150+ members residing in the heart of Northern California's agricultural land on a 290-acre reservation, along the bountiful Sacramento River, about four miles north of the Colusa city limits on Highway 45. The Colusa Indian Community owns and operates the Colusa Casino Resort, which is powered from the Tribe Utility Authority's cogeneration plant. The TUA's micro-grid provides highly reliable power to the casino and hotel resort, as well as tribal administration buildings, water and wastewater treatment facilities, a medical clinic, various ag loads, and several houses.





Description of Housing Power Project

The Housing Power Project expanded existing underground medium-voltage distribution to more than 30 households, a daycare, a mechanical shop, irrigation pumps, and a sewer lift station, which received electric service from the local electric utility (PG&E).

As part of the project, automatic meter reading (AMR) and advanced metering infrastructure (AMI) were installed to allow the Tribe to set up its own electric metering like a utility.



Description of Solar Canopy Expansion Project

The Solar Canopy Expansion Project is a solar photovoltaic (PV) system integrated with a carport canopy in the parking lot to the east of the Colusa Casino Resort and north of the existing parking canopy solar system.

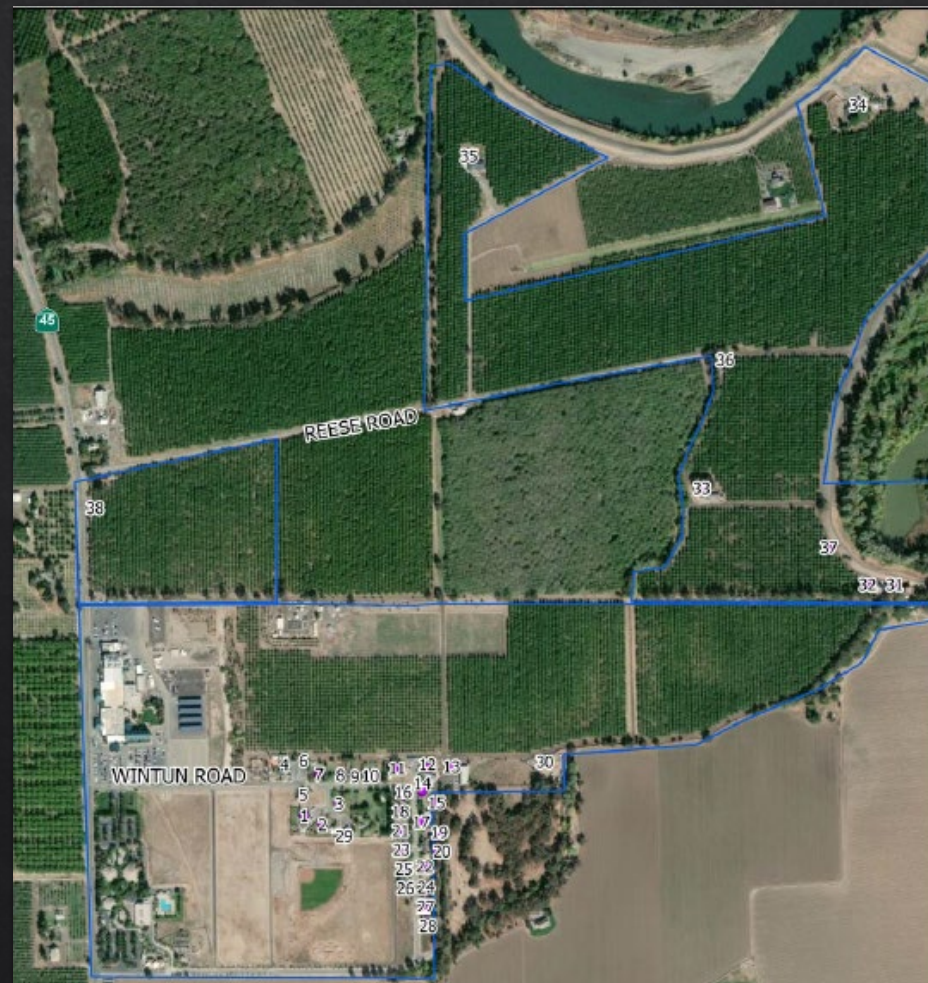
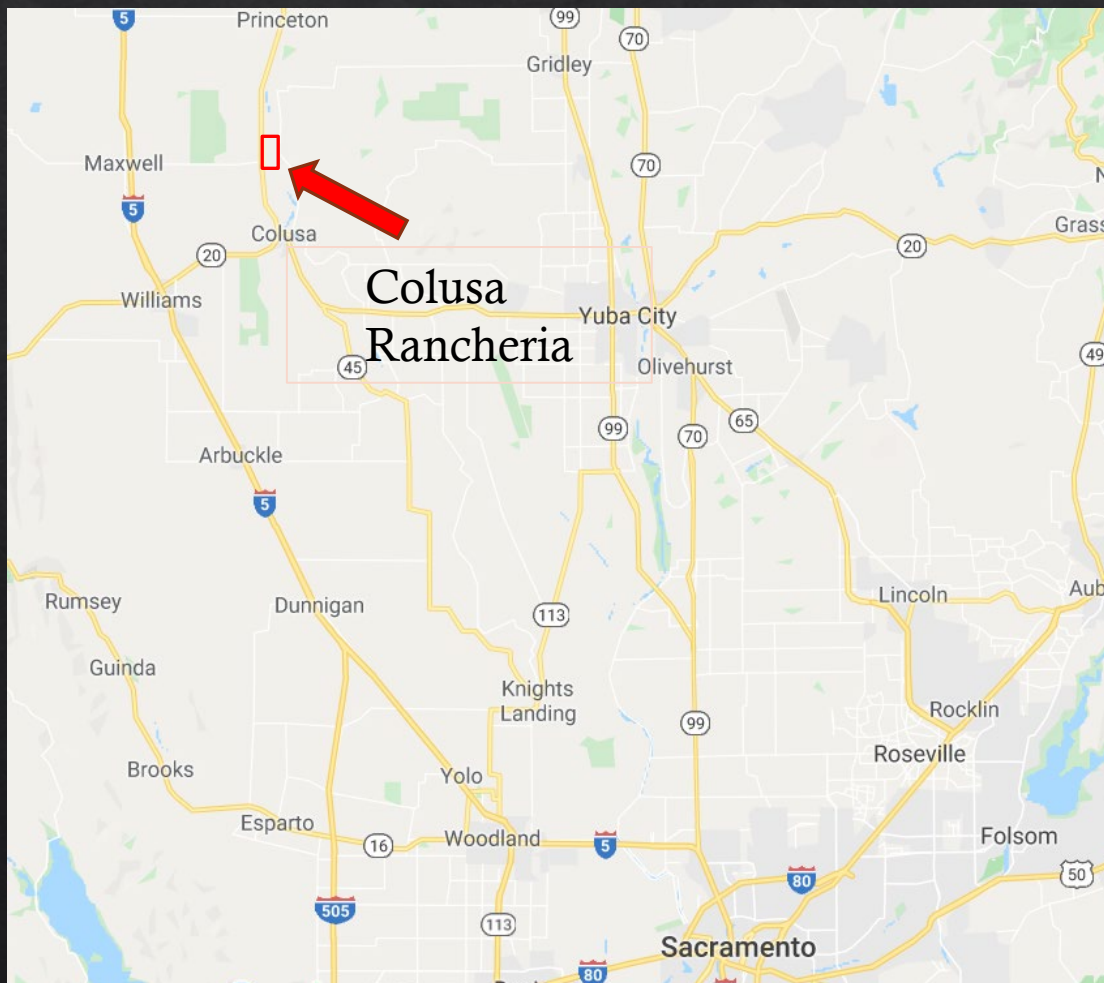
The new canopy system rating is 507.6 kW DC at Standard Test Conditions and 448kW AC (total inverter output rating).

This project interconnected with the existing Tribe-owned micro-grid generation system at medium-voltage and uses existing electrical infrastructure from the existing parking lot canopy solar system to reduce system costs.



Colusa Rancheria Location

Founded 1907



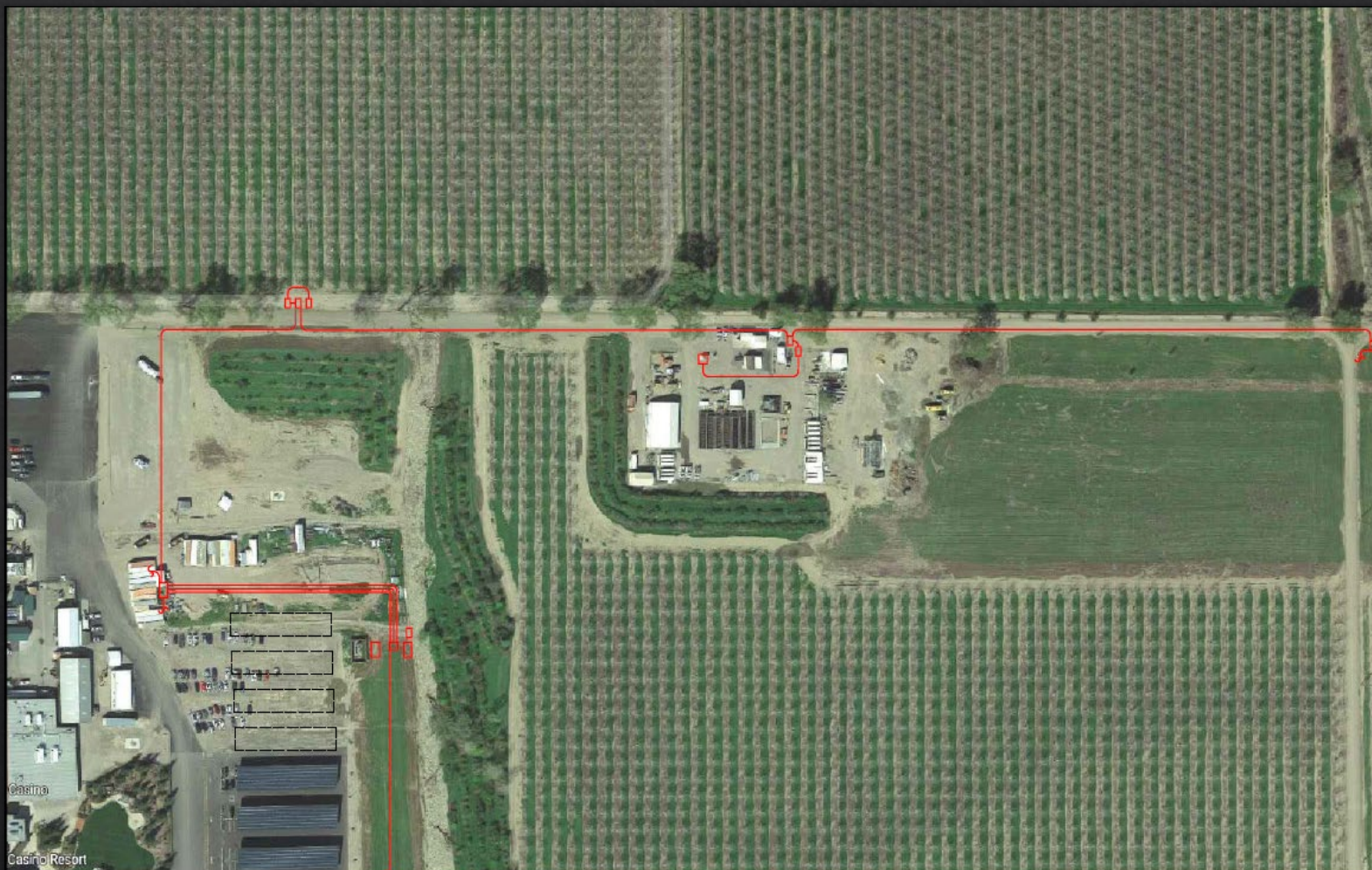


Project Location: Housing Power Project





Project Location: Housing Power Project



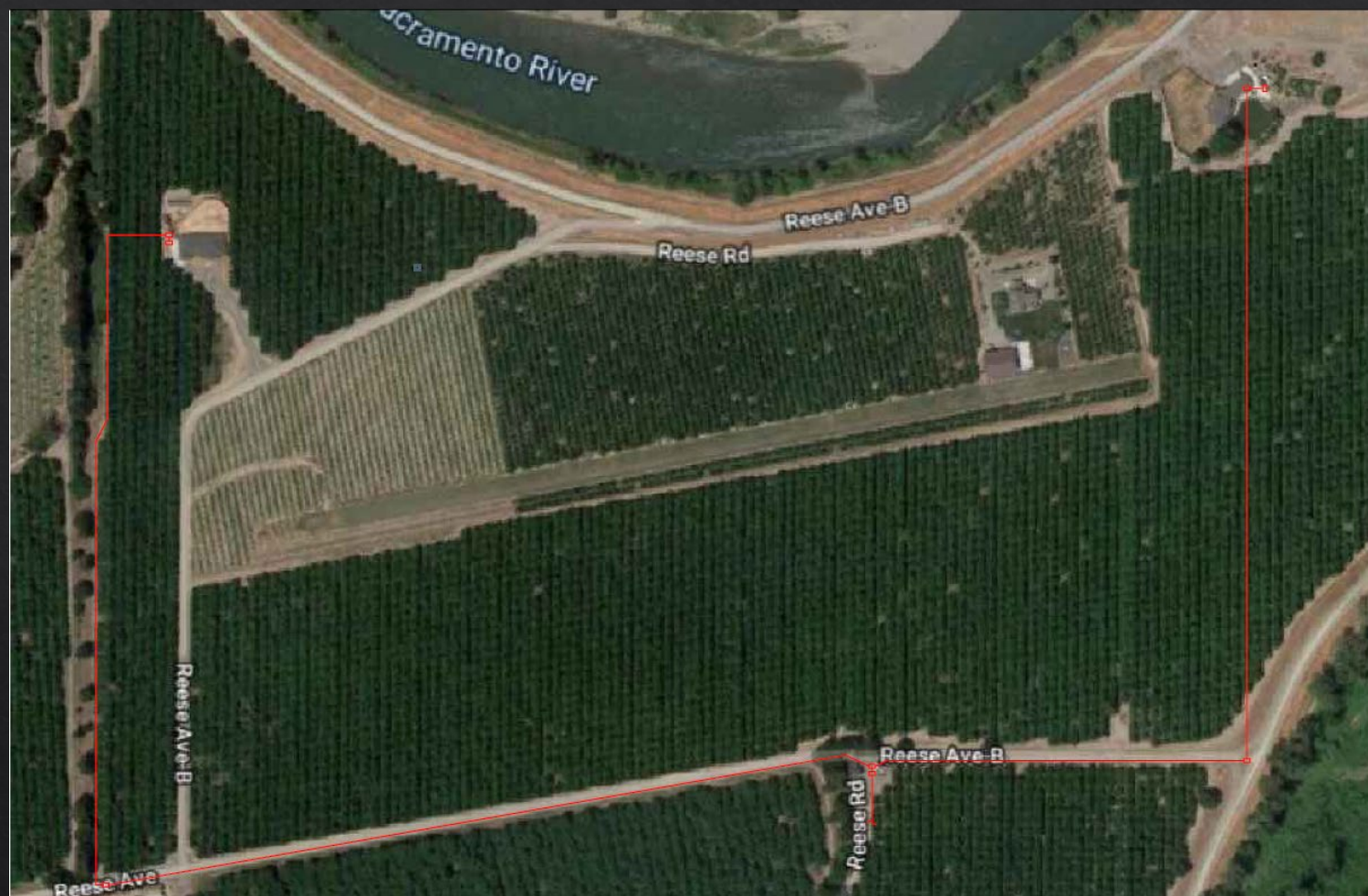


Project Location: Housing Power Project





Project Location: Housing Power Project





Project Location: Solar Canopy Expansion Project



Project Participants



- ◆ Business Contact is Mr. Daniel Gomez, Tribal Chairman
- ◆ Technical Contact is Mr. Ken Ahmann, Tribal Utility Authority Director
- ◆ Engineering and construction work done by subcontractors, under the supervision of Mr. Ahmann. Some of the construction work was self-performed by the Colusa Indian Community. The solar carport structure, modules, and inverters were provided by Sunpower.
 - ◆ Contractor: Geveden Industrial, Inc.
 - ◆ Engineer: Andrew Humphrey Engineering, LLC
 - ◆ Solar Carport Vendor: Sunpower

SUNPOWER®



ANDREW HUMPHREY ENGINEERING





Project Objectives: Housing Power Project

- ◆ Provides less expensive, more reliable electric energy to the Tribe for its members' households and commercial, agricultural, and industrial facilities than existing supply from PG&E.
- ◆ Saves the Tribe \$9,381,420 over the 30-year expected lifespan of the project, taking members' money away from the incumbent utility and giving it back to the Tribe's own Economic Development Corporation.



Project Objectives: Solar Canopy Expansion Project

- ◆ Costs approximately \$2.3 million and will generate approximately \$5.2 million in energy savings.
- ◆ Reduces carbon emissions by approximately 10,000 tons of CO₂ over the 30-year life of the project.
- ◆ Integrates into the Tribe's long-term energy goals and vision by providing Tribe-owned, low-cost, self-sufficient and renewable energy supply to the community.
- ◆ Reduces demand and prolongs the life of existing conventional generators.



Relevant Background Information: Housing Power Project

- ◆ The Colusa Indian Community owns and operates an existing 6 MW (megawatt) cogeneration plant. The Co-Gen operates islanded and autonomous from the local electric utility and employs a 4 MVA (mega volt amp) uninterruptible power supply (UPS) with 15 minutes of battery backup to provide highly reliable power supply to the Colusa Casino Resort, as well as tribal administration buildings, water and wastewater treatment facilities, a medical clinic, and several houses.
- ◆ This project connects a total of 39 new loads to the Tribe's existing micro-grid.



Relevant Background Information: Solar Canopy Expansion Project

- ◆ The Colusa Indian Community owns an existing solar canopy rated for 336kW-AC, which was built by Solaire Generation in 2014.
- ◆ The expansion project brings the Co-Gen's total solar capacity to nearly 800kW-AC.



Housing Power Project Progress

- ◆ All medium and low voltage infrastructure is installed.
- ◆ 39 new loads are disconnected from PG&E and are now being powered by the Tribe-owned Co-Gen plant.
- ◆ Project 100% complete as of September 2021.



Colusa Indian Community housing





Solar Canopy Expansion Project Progress

- ◇ All structural and electrical work is complete and the asphalt is installed.
- ◇ Canopies have been producing power since July 2021.
- ◇ Asphalt striping to be complete before end of the year.





Questions?

Ken Ahmann, Tribal Utility Authority Director, Colusa Indian Community

kahmann@colusa-nsn.gov

530.682.6562 – cell