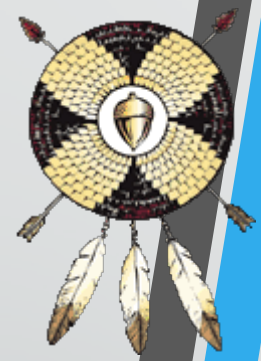


Colusa Indian Community Council (CA): Housing Power Project and Solar Canopy Expansion Project

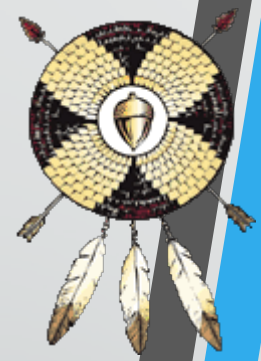
DOE Annual Program Review 2020

Presented by Ken Ahmann



Presentation Outline

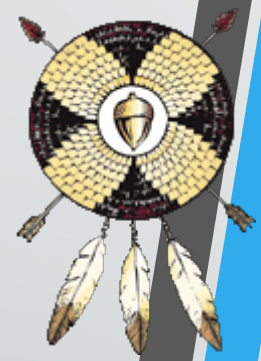
- Summary of Colusa Indian Community
- Description of Housing Power Project
- Description of Solar Canopy Expansion Project
- Colusa Rancheria and Project Locations
- Project Participants
- Project Objectives
- Relevant Project Background
- Project Progress To Date
- Contact Information



Summary of Colusa Indian Community

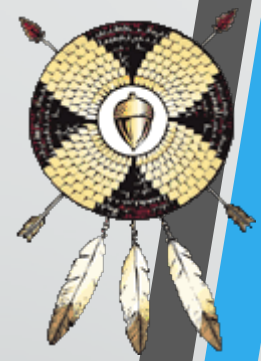
The Colusa Indian Community consists of 150+ members residing in the heart of Northern California's agricultural land on a 290-acre reservation, along the bountiful Sacramento River, about four miles north of the Colusa city limits on Highway 45. The Colusa Indian Community owns and operates the Colusa Casino Resort, which is powered from the Tribe-owned and operated cogeneration plant. The Co-Gen'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 wellness center, and several houses.





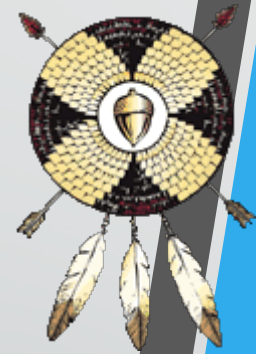
Description of Housing Power Project

The proposed project will expand existing medium-voltage distribution to more than 30 households, a daycare, a mechanical shop, irrigation pumps, and a sewer lift station, which currently receive electric service from the local electric utility. As part of the project, automatic meter reading (AMR) and advanced metering infrastructure (AMI) will be installed to allow the Tribe to set up its own electric metering like a utility.



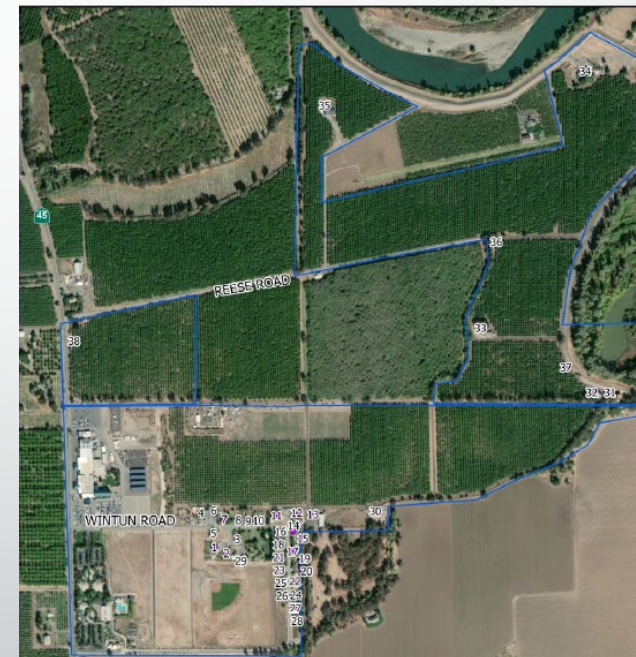
Description of Solar Canopy Expansion Project

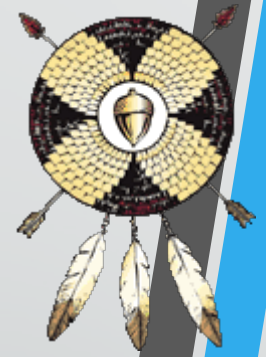
The proposed project is a solar photovoltaic (PV) system integrated with a carport canopy in the parking lot to the east of the Colusa Casino Resort and north of the existing parking canopy solar system. The proposed system rating is 507.6 kW DC at Standard Test Conditions and 448kW AC (total inverter output rating). The proposed project will interconnect with the existing tribe-owned micro-grid generation system at medium-voltage and will use existing electrical infrastructure from the existing parking lot canopy solar system to reduce system costs.



Colusa Rancheria Location

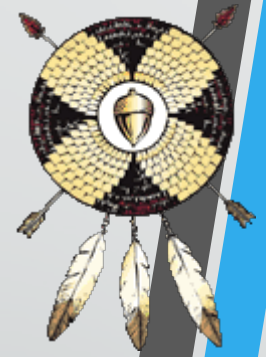
Founded 1907





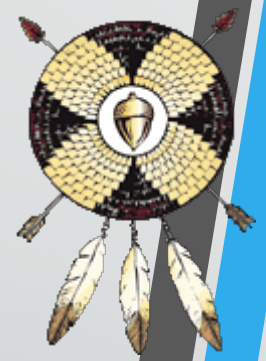
Project Location: Housing Power Project





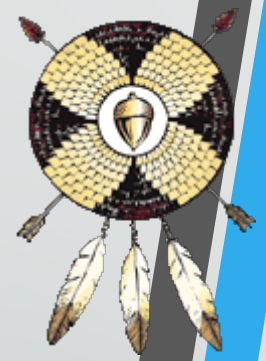
Project Location: Housing Power Project



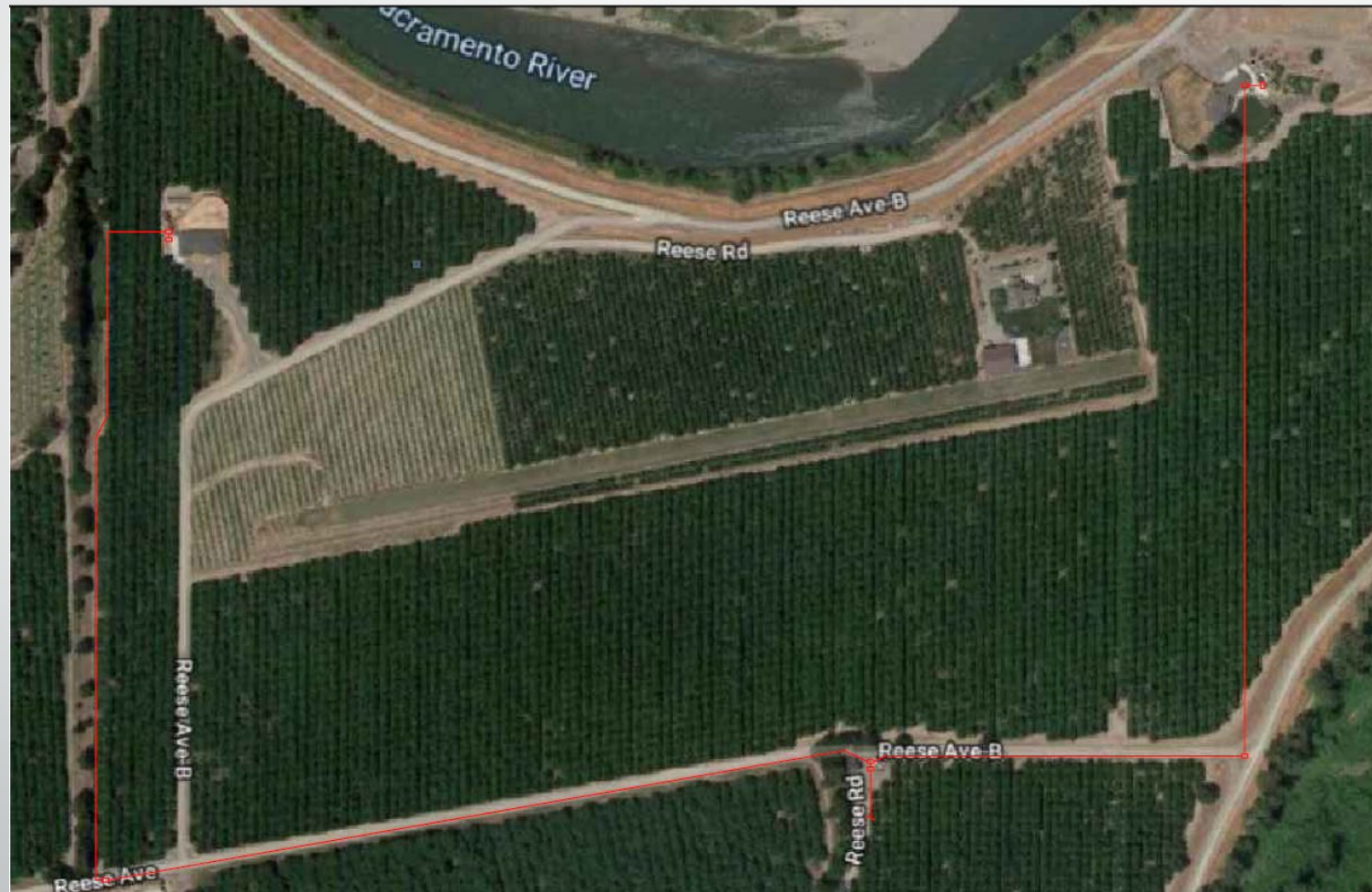


Project Location: Housing Power Project

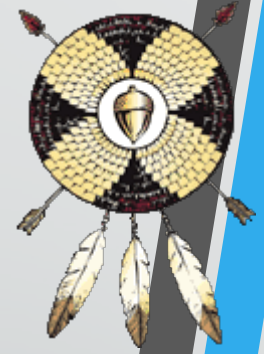




Project Location: Housing Power Project



Project Location: Solar Canopy Expansion Project



Project Participants

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

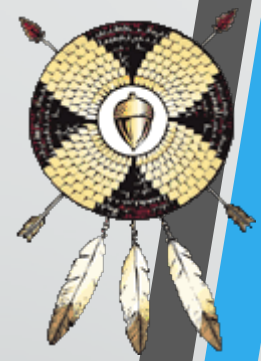
The Sunpower logo features the word "SUNPOWER" in a bold, sans-serif font. The letter "O" is replaced by a stylized orange sun icon with rays. A registered trademark symbol (®) is located to the upper right of the text.

SUNPOWER®

The logo for Andrew Humphrey Engineering consists of a stylized orange and yellow sun or flower icon above the company name.

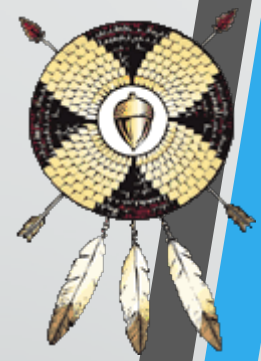
ANDREW HUMPHREY ENGINEERING





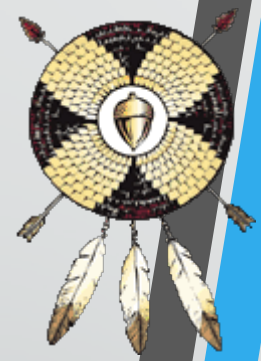
Project Objectives: Housing Power Project

- The proposed project will provide less expensive, more reliable electric energy to the tribe for its members' households, and commercial, agricultural and industrial facilities than existing supply from the utility.
- Over the 30-year expected lifespan of the project, it is expected to save the Tribe \$9,381,420, taking members' money away from the incumbent utility and giving it back to the tribe's own Economic Development Corporation.



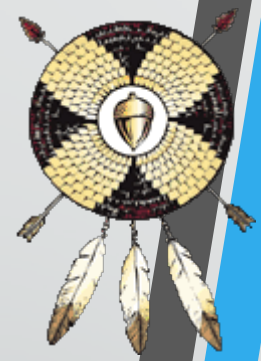
Project Objectives: Solar Canopy Expansion Project

- The proposed project will cost approximately \$2.3 million and generate approximately \$5.2 million in energy savings and reduce carbon emissions by approximately 10,000 tons of Co₂ over the 30-year life of the project. The proposed 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. It will also reduce demand and prolong 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 wellness center, 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 proposed project is an expansion of the existing parking canopy solar array, which will bring the Co-Gen's total solar capacity to nearly 800kW-AC.

Housing Power Project Progress

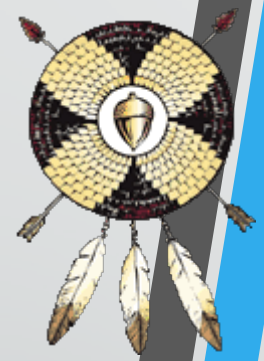
- Engineering and design is complete.
- All medium and low voltage infrastructure is installed.
- 36 of the 39 new loads are disconnected from PG&E and are now being powered by the Tribe-owned Co-Gen plant.
- Project completion is slated for December 21st, 2020, one year ahead of schedule.



Solar Canopy Expansion Project Progress

- All civil work is complete, including grading, trenching, storm drainage, concrete work, and parking lot asphalt.
- All canopy pier foundations are poured.
- Inverters are installed.
- Canopy steel construction, PV installation, and final commissioning are slated to be complete in January 2021, nearly one year ahead of schedule.





Questions?

Ken Ahmann, Co-Gen Director, Colusa Indian Community Council

kahmann@colusa-nsn.gov

530.682.6562 – cell