

Kit Carson's Energy Transition & Grid Modernization Progress Report

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Kit Carson's Objectives

Equity

Support solar energy for low-medium-income (LMI) households and provide opportunities for Indian nation participation in solar development. Provide technology and broadband access for all from grid modernization.

Cost of Electricity

Decrease the cost of electricity for all and maintain low electric rates.

Access to Renewables

Ensure equal access to solar – including for those who cannot utilize rooftops – while providing consumer participation in renewables.

Economic Development

Empower private sector participation in solar development, stimulate growth, and create local jobs.

Resilience and Reliability

Utilize distributed generation to enhance resilience, support grid reliability, and reduce GHG emissions.

Grid Modernization

Integrate renewable energy, storage, broadband access, smart devices and microgrids thereby, building a modern grid.

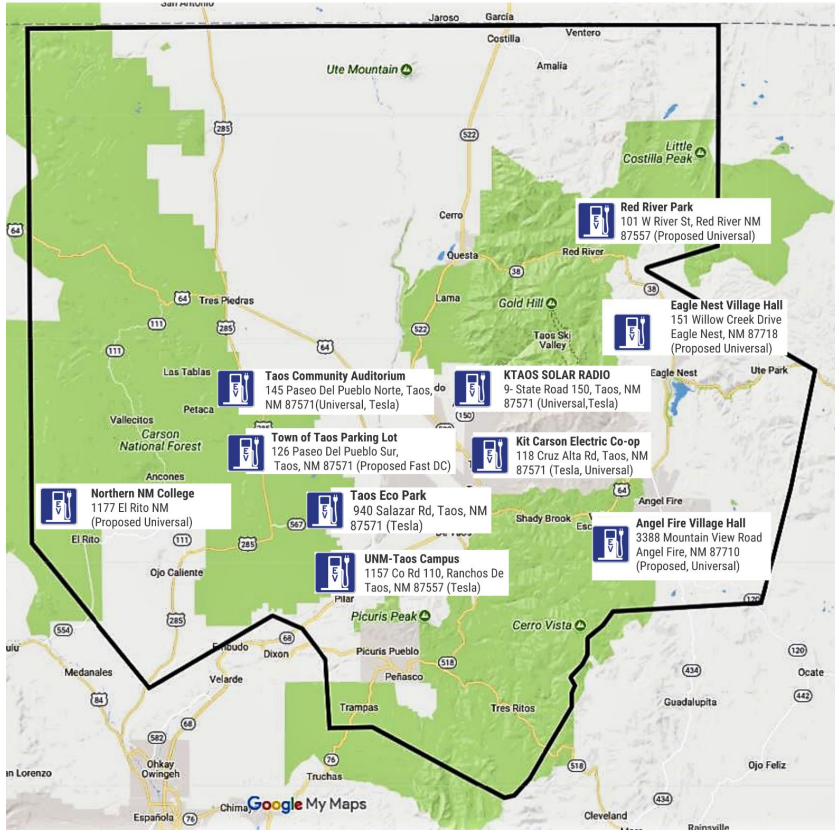


Kit Carson Electric Coop's Energy Transition & Grid Modernization Goals

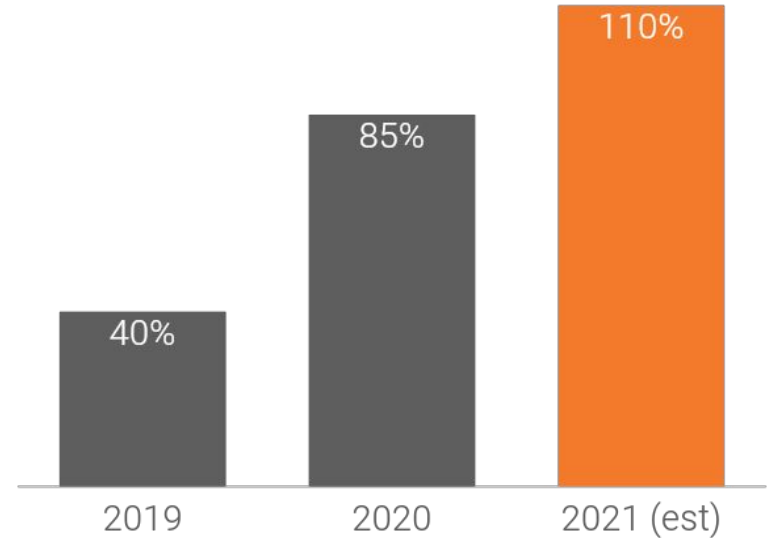
- ❖ **Reaching 100% Daytime Solar in 2022**
Currently at 56% daytime solar
- ❖ **Renewables on the grid - 41 MW Solar and 15 MW BESS**
- ❖ **Diversifying the Energy Portfolio by adding Wind**
- ❖ **Lowering the Cost of Energy**
- ❖ **Connecting the Grid in Real-Time – Camus Energy**
- ❖ **Jurisdictional and Business Partnerships**
- ❖ **Implementation EV Infrastructure Plan**
- ❖ **Achieving NM State's ETA Goals & Decarbonization**
- ❖ **Fuel Conversion Program**
- ❖ **Energy Efficiency**
- ❖ **Fiber Optic / Broadband Upgrade 10 – 100GB**
- ❖ **Moving towards a service company**



KCEC EV Charging Station Map



KCEC Distributed Solar Generation as Percentage of Daytime Peak Demand



30 Charging Points = 10 single port charging stations (existing) and 10 dual port charging stations which is 20 points

KCEC is working across sectors to implement a full EV Infrastructure Plan which includes fleet conversion

Educational Institutions

- EV Buses
- Job Training

Private Sector

- Fleet Conversion
- Bikes
- Charging Stations

Municipalities, State and Counties

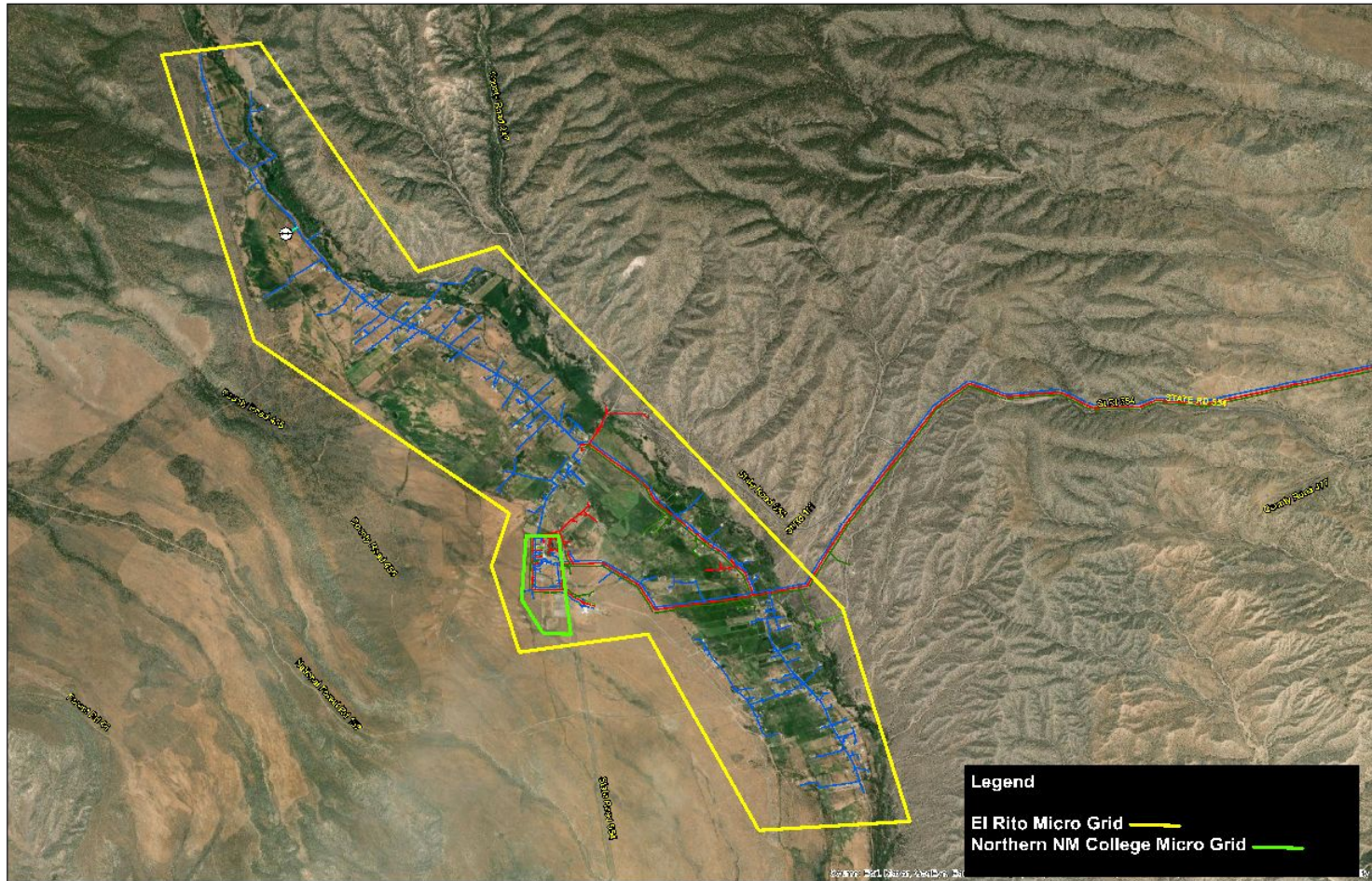
- Permitting & Ordinance Changes
- Fleet Conversion
- Public Transportation

Individual

- Home Charging
- EV Purchase
- Bikes
- Gas Water Heater & Space Heater



El Rito Microgrid



Resilient El Rito

The Resilient El Rito community resilience microgrid will incorporate a NNMC campus microgrid and college facilities (including commercial kitchen and dormitories), within a larger community microgrid envelope based on KCEC's local distribution feeder. In the event of an extended outage, should "load shedding" become needed, critical loads comprising adjacent public facilities (i.e., the fire station, medical/dental clinic, elementary school, senior center, post office) would be supported indefinitely, in a "networked" or "nested" architecture. The campus PV array would serve as the primary local generation source, to be complemented by a Battery Energy Storage System (BESS) and switchgear, communications, and controls technology.

NNMC's El Rito Campus - A Microgrid within a Microgrid

Goals of the El Rito Campus Project

- Scalability and replicability: across KCEC's system, state-wide, and beyond
- Support R&D, testing, validation, demonstration (keyed to risk tolerance at the campus)

KCEC Community Microgrid Benefits

- Resilience
- Reliability
- Grid services
- Support entrepreneurial & economic development

NNMC Campus Microgrid Benefits

- Instruction
- Sustainability
- Supply power to campus critical buildings
- Seven NNMC vans



Northern New Mexico College and KCEC are partnership with these high schools. NNMC is revitalizing the Trades Program in El Rito, NM. In the near future, each school will be served by an EV Bus.

- Espanola
- Chama
- Mesa Vista
- Pojoaque
- Jemez Mountain

Partnership with Camus Energy for System Visibility

KCEC is investing in foundational smart grid technologies:

- Universal broadband internet
- Smart meters
- Grid instrumentation
- Real time system visibility
- Microgrids within Microgrids (RER) with Islanding Capacity

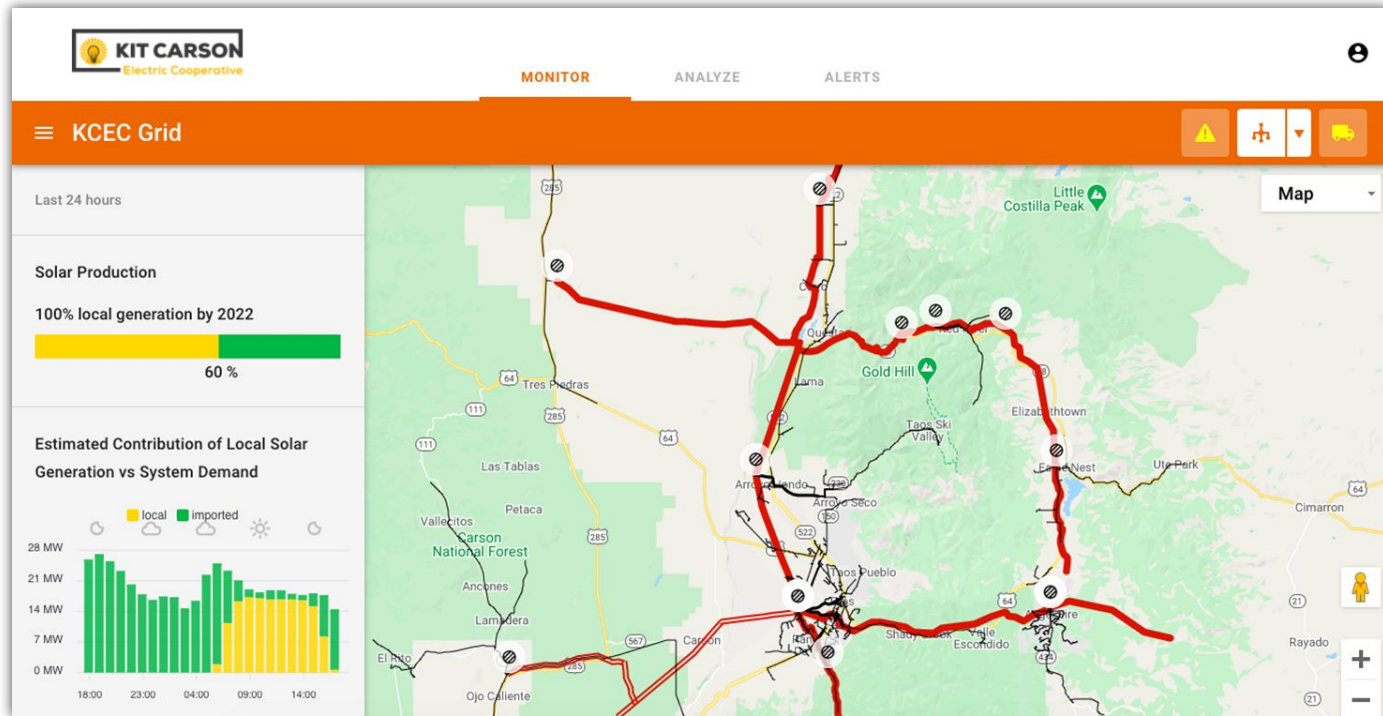


CAMUS
Zero Carbon Grid Orchestration



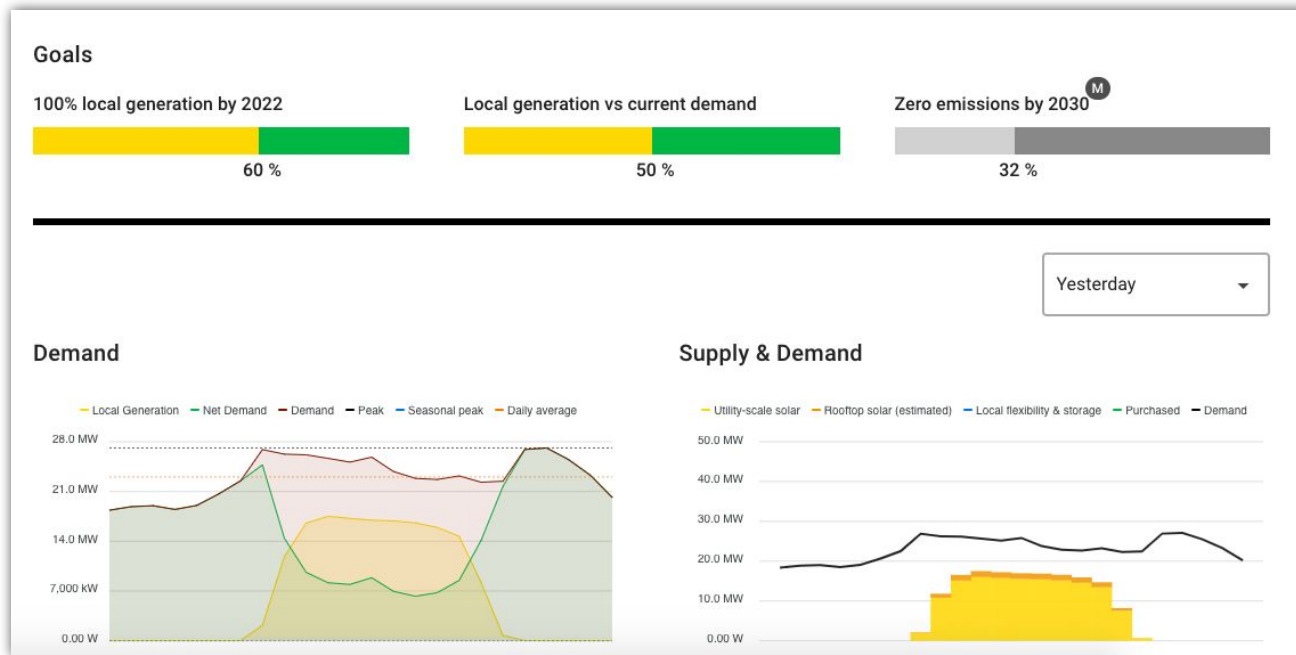
Connecting the Grid in Real-Time

Leveraging the broadband network to collect data in real time from multiple sources gives KCEC an overview of what's happening across the grid.



Sharing Progress with the Community

Tracking ongoing progress towards renewable energy goals provides insight to the utility and also provides tools for engaging the community.



THANK YOU

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