



**Water and Natural Resources
Legislative Committee - *Cooperative
Energy Power Provider Options and
Updates*
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November 7, 2019



Kit Carson Progress Report

- ❖ Reaching 100% Daytime Solar by March 2021
- ❖ Increase in renewables on the grid - 38 MW Solar and 15 MW BESS
- ❖ Cost of Energy
- ❖ Software Controls and Planning - (DG)² and Ritta
- ❖ Fiber Optic Network Upgrade to 10 GB - 100 GB
- ❖ Depth of Partnerships: NREL and Sandia, Guzman Energy, Camus Energy, NM SMART Grid Center, ICAST, etc.
- ❖ EV Charging Stations Implementation and Enchanted Circle EV Charging Station System
- ❖ Workforce Development
- ❖ Beginning to research and analyze a pathway for Carbon-free energy



Solar Portfolio

Array	Size Of Array	Commercial Operation Date	Partner
UNM Taos Array	445 kW	11/1/2009	University of New Mexico-Taos
KCEC Array (Canopy)	82 kW	1/14/2010	PPC Solar, Taos, NM
KTAO Array (Canopy)	38 kW	2/13/2010	KTAO Radio Station, Taos, NM
Penasco Schools	50 kW	12/30/2010	Penasco Independent Schools
Taos High School	50 kW	12/30/2010	Taos High School
Chevron	1,250 kW (1.25 MW)	2/1/2010	Chevron Mining Corporation
Amalia Array (RCCLA)	1,250 kW (1.25 MW)	5/21/2012	Rio Costilla Cooperative Livestock Association, Costilla, NM
Taos Eco Park (Canopy)	60 kW	12/30/2011	Town of Taos
Taos Charter School (Community Solar)	100 kW	8/27/2012	Taos Charter School
Blue Sky Energy	1,250 kW (1.25 MW)	8/1/2012	PPC Solar, Taos, NM
Eagle Nest Elementary	100 kW	8/24/2015	Eagle Nest Elementary
Tres Piedras Solar Array	1,000 kW (1MW)	8/1/2017	Private Investor, Taos, NM
Picuris Pueblo (Penasco, NM)	1,000 kW (1 MW)	12/18/2017	Pueblo of Picuris, Penasco, NM
Eagle Nest Lake, NM	1,040 kW (1 MW)	10/05/2018	Village of Eagle Nest

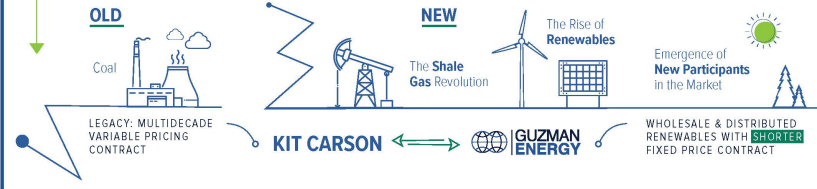
KCEC Scheduled Arrays

Array	Size Of Array	Current Status of Project	Estimated Construction Cost	Partner
Taos, NM (Town Of Taos Water Treatment)	1,000 kW (1MW)	Waiting on Town of Taos	\$2 Million	Town of Taos
Taos, NM (Town Of Taos Water Treatment)	3,000 kW (3MW)	Estimated Completion Date 02/2020	\$6.9 Million	Town of Taos
Northern NM College (El Rito, NM)	1,500 kW (1.5MW)	Estimated Completion Date 12/2019	\$3.55 Million	Northern NM College
Questa, NM	1,500 kW (1.5 MW)	Estimated Completion Date 12/2019	\$3.55 Million	Lupe Young
Angel Fire, NM	6,000 kW (6MW)	Estimated Completion Date 1st Quarter 2021	\$13.8 Million	Village of Angel Fire
Taos, NM	15,000 kW (15 MW)	Estimated Completion Date 1st Quarter 2021	\$34.5 Million	Private Investor, Taos, NM
Taos, NM (Battery Storage)	12,000 kW (12 MW)	Estimated Completion Date 1st Quarter 2021	TBD	Private Investor, Taos NM
Angel Fire (Battery Storage)	3,000 kW (3 MW)	Estimated Completion Date 1st Quarter 2021	TBD	Village of Angel Fire
		Solar Installer (ParaSol Builders) Taos, NM		

The cost of energy will be 4.5 cents when the \$37M exit fee is completed

KIT CARSON ELECTRIC CO-OP VISION

KCEC adopted Guzman Energy's **NEW UTILITY MODEL** to capture the value created by **THE NEW ENERGY LANDSCAPE**. One that drastically **CHANGED IN JUST THE LAST 10 YEARS.**



WITH GUZMAN ENERGY, KCEC WILL SAVE **\$50-\$70 MILLION**. **THE SAVINGS ARE REAL**.
 10 year fixed price contract with no cap on renewables. **vs.** Multi-decade contract where prices may increase at any time.



PLUS, GUZMAN ENERGY IS HELPING KCEC'S COMMUNITY TAKE CONTROL OF ITS **ENERGY FUTURE** WITH **SUMMER SOLAR INDEPENDENCE;**

FURTHER POWERING THEIR ECONOMY IN MANY WAYS...

CURRENT SOLAR **9 MW** → **35 MW** TARGET SOLAR (BY 2022)

- 1,352 Jobs (contract & FT)
- \$22 M in local labor & service cost
- \$3,640,000 in sales tax revenue
- \$208,000/yr in property tax revenue

GUZMAN ENERGY GIVES BACK TO THE KCEC COMMUNITY

- Scholarships
- Scoreboards



Solar Arrays and Battery Energy Storage Plans

- ❖ Solar energy produces lower prices and stability
- ❖ It contributes to regional economic development
- ❖ ParaSol, LLC can bond for large utility arrays. With each MW array, approximately \$1.1 million is generated and remains in the local economy

Revised Goal:

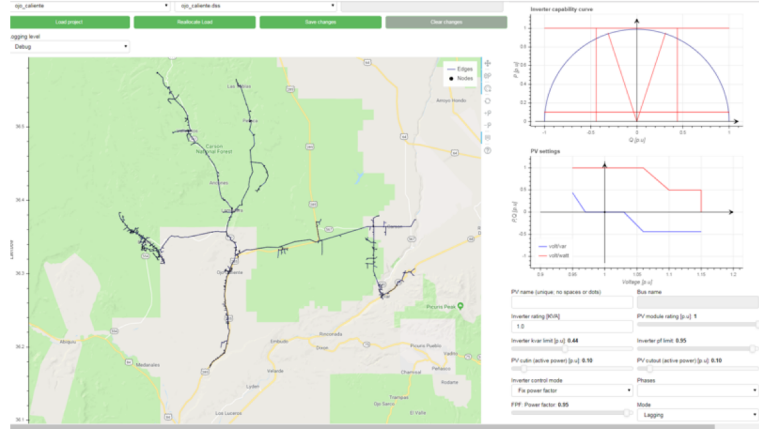
38MW of solar and 15 MW of Battery Energy Storage

- ❖ 10 MW built
- ❖ 17 MW under contract and construction
- ❖ 21 MW under contract
- ❖ 2 Battery Storage Locations with 15 MW under contract

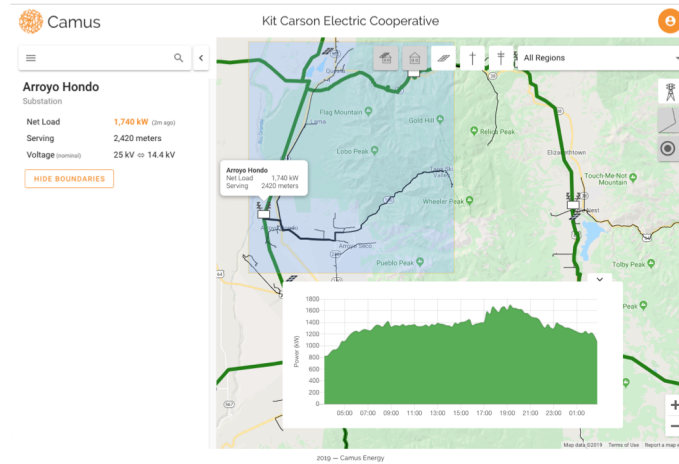
Topic	Taos Mesa Energy Facility	Angel Fire Energy Facility	Total
Lessee	Taos Mesa Energy Facility LLC	Angel Fire Energy Facility LLC	N/A
Size of Solar Array	15 MWac	6 MWac	21 MWac
Cost of Solar Array	<i>confidential</i>	<i>confidential</i>	<i>confidential</i>
Size of Battery	12 MW by 2 Hour (24 MWh)	3 MW by 2 Hour (6 MWh)	15 MW by 2 Hour (30 MWh)
Cost of Battery	<i>confidential</i>	<i>confidential</i>	<i>confidential</i>
Asset Location Legal Address	Lower Las Colonias Road, Taos County, NM 87529 (roughly 36.43 N; 105.6 2W)	Darrell Benjamin Road, Village of Angel Fire, NM 87710 (roughly 36.44 N; 105.3 W)	
Projected Commencement Date	The project will commence the start of construction in November 2019 and it is anticipated to reach operation on March 31, 2021	The project will commence the start of construction in November 2019 and it is anticipated to reach operation on March 31, 2021	N/A
Is battery expected to be charged 100% by renewable sources? If not, what level is projected?	Yes, the battery is expected to be charged 100% by the solar array at the site	Yes, the battery is expected to be charged 100% by the solar array at the site	N/A

Software Control System in Development

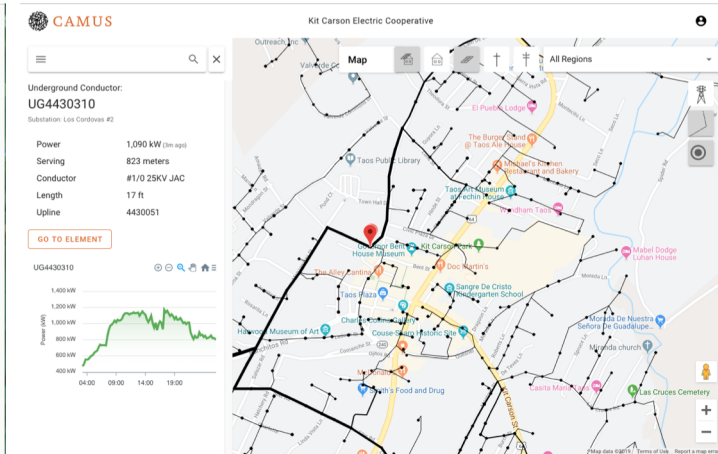
(DG)² with NREL and Guzman Energy for planning and locational value



Camus Energy – an operational dashboard

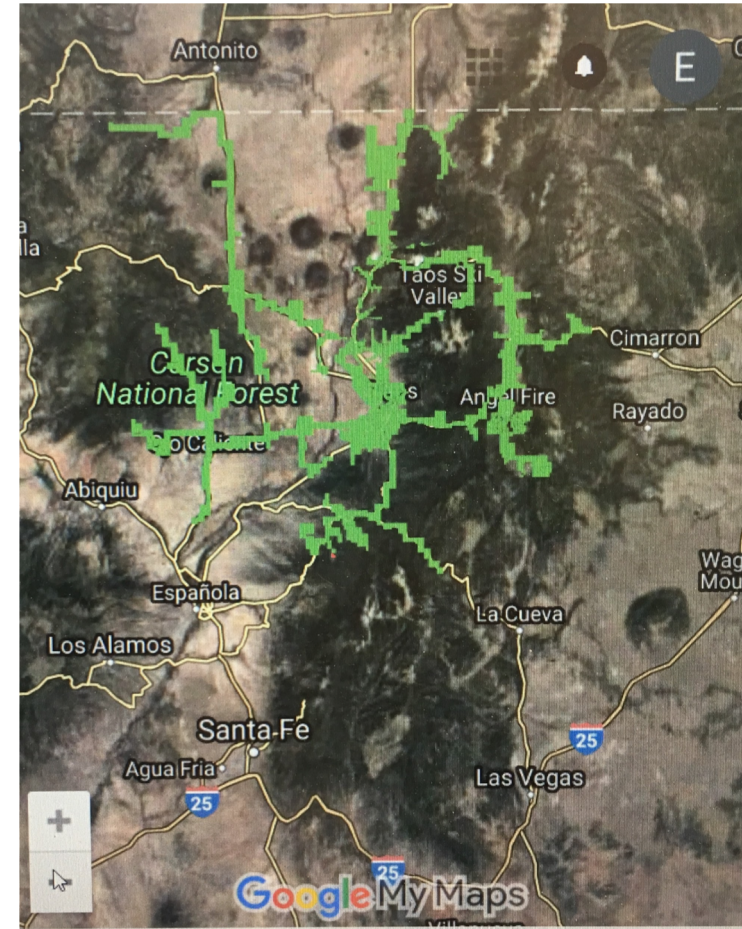


Sandia National Lab (coming)



Kit Carson Internet - Broadband is Imperative for a Renewable Energy System

- ❖ Core network is expanding to 40 GB
- ❖ New equipment has the capacity to upgrade to 100 GB
- ❖ KCI can currently supply customers with 1 GB service
- ❖ KCI will be able to supply individual customers with 10 GB (coming soon)
- ❖ KCI is increasing its purchased bandwidth
- ❖ KCI leases and maintains dark fiber
- ❖ KCI has submitted fiber maps to the State of NM



KCEC Partnerships

- ❖ Energy generation and trading: Guzman Energy (Power Supply Partner)
- ❖ DER financing and development:
 - Community Solar
 - 3rd Party Purchase Power Agreements
 - KCEC owned projects
- ❖ DER installation partners
 - Town of Taos
 - Village of Angel Fire
 - Village of Eagle Nest
 - Taos County
 - UNM Taos
 - Northern New Mexico College (El Rito, NM)
 - Picuris Pueblo
 - Southern Methodist University (SMU)
 - Cooperative members
 - Chevron Power and Energy Management Company
 - Washington Gas
 - SSA Solar of NM
 - Private landowners
 - ParaSol LLC
- ❖ National Renewable Energy Laboratory
 - KCEC Renewable Energy Roadmap
 - Solar Energy Innovation Network – (DG)² DER planning and locational
- ❖ Sandia National Laboratory – battery storage
- ❖ Camus Energy – operational control system
- ❖ NM SMART Grid Center
- ❖ ICAST – solar for low income



TAOS



CAMUS
Zero Carbon Grid Orchestration



Looking Forward – Electric Vehicles

- ❖ Installed twelve EV charging stations in Taos 2019
- ❖ Working with partners on an EV charging station system: currently installed and future installations
- ❖ VW application for an Enchanted Circle EV charging station system to increase sustainable tourism
- ❖ Working with dealerships and car makers for a future EV buying program



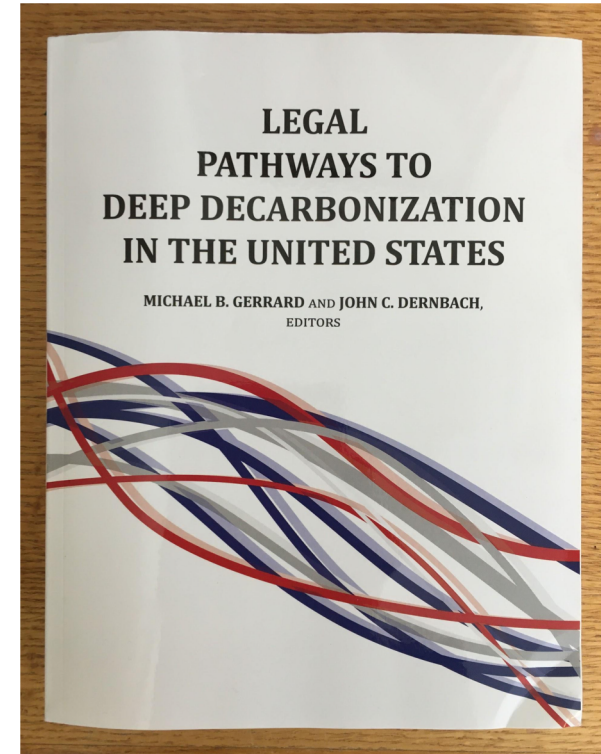
WORKFORCE DEVELOPMENT

- ❖ Restructuring,
- ❖ Professional Development,
- ❖ Succession Planning, and
- ❖ Right Sizing



Looking Forward to Carbon-free Energy Resources

- ❖ Kit Carson's current DER integration is mitigating carbon costs today
- ❖ Guzman Energy buying solar and wind on the local market
- ❖ Increased number of EV vehicles decreases carbon



Legislative Leadership to Support a Renewable Energy for New Mexico

A formula to keep Co-ops financially whole

- I. Self-Governance - the Ability to pass through costs: tree trimming, property taxes, insurances, etc.
 - I. New emerging business model
 - Setting policies supporting emerging technologies (battery storage, EV's, behind-the-meter applications, etc.)
 - II. Rate Design
 - Decoupling rates in order to keep rates stable
 - Charging different rates within a customer class (low-income for qualifying residential customers)

Questions?

Thank you

