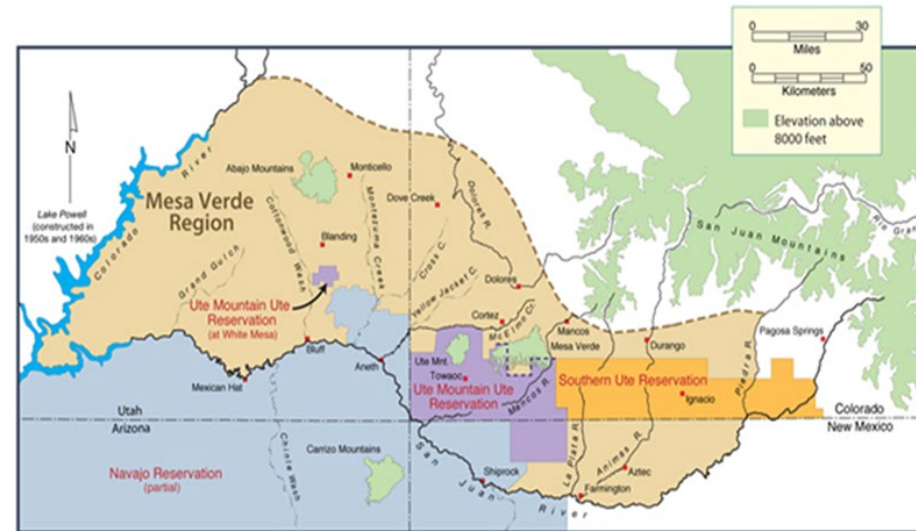
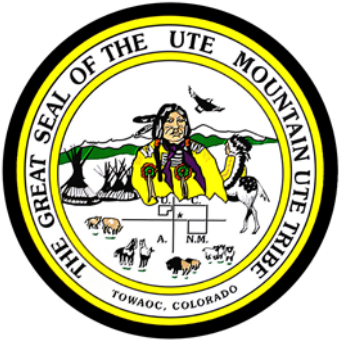


Ute Mountain Ute Tribe

- Originally, the Utes were seven Bands in CO and UT
- Weenuche Band is UMUT
- 582,321 Acres of Land
- Land Base in Colorado, New Mexico, Utah
- 7,700 Farm and Ranch Enterprise
- Hotel and Casino
- Weeminuche Construction Authority
- Tribal Park and Tourism

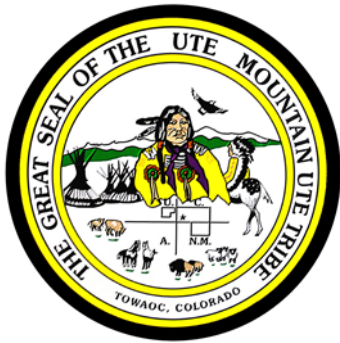




Snapshot of the Ute People



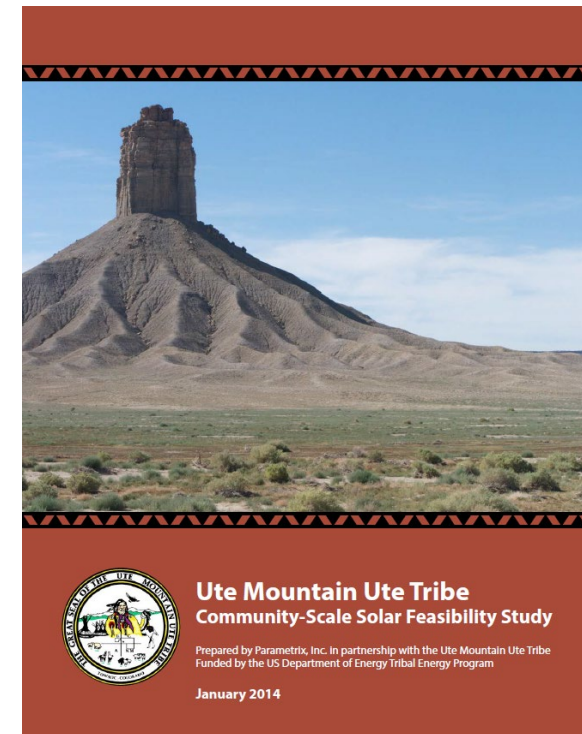
- ▶ Originally Hunters and Gatherers
- ▶ 2,100 Ute Mountain Ute Tribal Members
- ▶ 55 Years of Age, Life Expectancy
- ▶ 26 Years of Median Age
- ▶ 37.8% Poverty vs. 12.5% in Colorado
- ▶ \$13K Per Capita vs. \$42K in Colorado



Project Overview

- **High Level Goals & Outcomes:**

- Actualize phase I of 2014 Feasibility Study; deploy 1 MW array.
- Provide paid job skills training for Tribal members (intern positions) in solar installation, maintenance and repair, and additional Grid Alternatives led training through TERO, Temporary Worker Program, and for volunteers.
- Off-set both a substantial number of buildings, and substantial percentage of Tribal load (over 25%) with clean solar power, eliminating an estimated 1,515 tons of greenhouse gas emissions annually.
- Community solar bill credits to be negotiated with utility; estimate at 60% residential, 40% government buildings.
- Set UMUT on a path to energy independence; save tribe an estimated \$172,200 in energy expenses annually and save an estimated \$3,444,000 over the life of the solar system.
- Transition tribal energy economy from exclusively fossil fuels to renewable energy revenue (Stepping Stone)

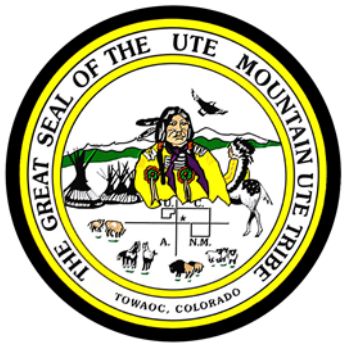


- **Funding:**

• DOE	\$973,820
• UMUT Match	\$973,820
• Leveraged Dollars	<u>\$216,404</u>
Total Budget:	\$2,164,044

- **Complex interconnection**

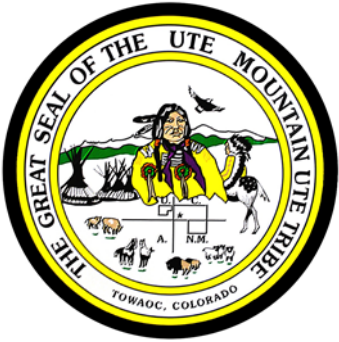
- Behind the meter(s) of large enterprise loads
- Currently no single load big enough to allow 1 MW interconnection; coupling a number of loads behind one meter is current strategy- Nuchu1 circuit should suffice
- Establish a master meter with O&M relationship negotiated with the local utility to handle current underground lines and transformers



Start to Finish

- Two+ years to Plan, Design, Negotiate and Construct
- > 6 months to design , custom build and deliver the *transformer*
- Grid Alternatives as partner, EPC
- Limited to 1 MW by Tri-State policy
- Local Electric Cooperative very helpful partner

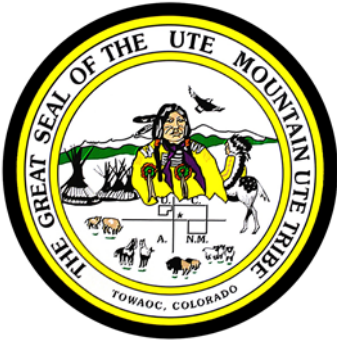




Commissioning of 1 MW PV Array

- After a long wait for the delivery and installation of the custom built transformer, the system was brought online in March 2020!!
- It was only at 50% capacity from mid-March through mid-May
 - Curtailment System needed to be tested
 - Then COVID arrived

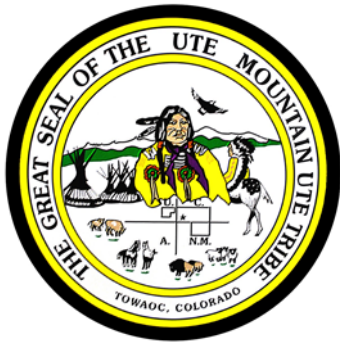




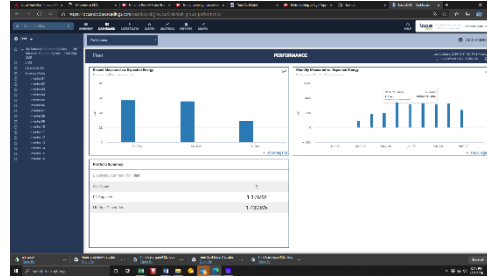
Passed the Torch



- Grid Alternatives and Circuitous Electrical Solutions deliver all technical manuals, warranty information in hard copy and electronically
- Curtailment Test completed in May
- System goes to 100% capacity
- SCADA system now online



Generating Clean Energy and Saving \$

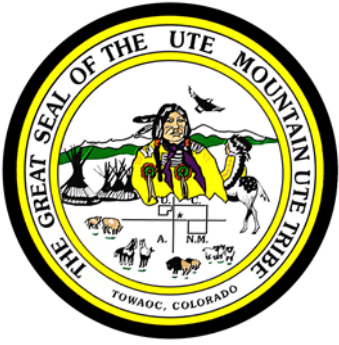


Estimates from 2018-2019 data graphs

Account	Meter	% of Bill to Credit	peak kWh/month	Usage \$ max	minimum kWh/month	Usage \$ Min	Peak demand history estimate (kW)		
GOV-1	110 W. Mike Public Works Building Wash Rd. Towaoc, CO	6987003	152965083	100	6900 \$	742.10	3500 \$	376.43	13
GOV-8	Lights (PW) Towaoc, CO	6987143	152402300	100	1200 \$	129.06	850 \$	91.42	1.9
GOV-9	Mike Wash Road Bike Path (PW) Towaoc, CO	6987101	152402389	100	430 \$	46.25	225 \$	24.20	0.95
GOV-10	Mike Wash Road Bike Path (PW) Towaoc, CO	6987102	152402359	100	640 \$	68.83	325 \$	34.95	1.3
GOV-11	Mike Wash Road Bike Path (PW) Towaoc, CO	6987103	152402357	100	0 \$	-	0 \$	-	0
GOV-12	Mike Wash Road Bike Path (PW) Towaoc, CO	6987104	152402843	100	845 \$	90.88	420 \$	45.17	1.5
GOV-13	Mike Wash Road Bike Path (PW) Towaoc, CO	6987105	140787039	100	400 \$	43.02	220 \$	23.66	900
GOV-14	Mike Wash Road Bike Path (PW) Towaoc, CO	6987106	152402348	100	380 \$	40.87	200 \$	21.51	0.7
GOV-15	Mike Wash Road Bike Path (PW) Towaoc, CO	6987108	152402942	100	945 \$	101.63	210 \$	22.59	3.8
GOV-16	? Lights (PW) Towaoc, CO	6987090	144199069	100	940 \$	101.10	375 \$	40.33	6.8
GOV-17	Bear Dance Rd (lights?) N. Bear Dance Rd.	3844	152404843	100	800 \$	86.04	25 \$	2.69	2.5
GOV-31	UMT (PW) n/a Towaoc, CO	6987152	152402924	100	500 \$	53.78	1200 \$	129.06	9.5
GOV-39	HAGER / WATER (PW) Towaoc, CO	6987076	140784755	100	39.9 \$	4.29	12 \$	1.29	160
GOV-40	WATER TREATMENT PLANT Towaoc, CO	6987040	152402887	100	440 \$	47.32	0 \$	-	0.99
GOV-41	WATER DEPT Towaoc, CO	6987075	152402888	100	170 \$	18.28	10 \$	1.08	0.2
GOV-42	WATER DEPT 36-44-36-30 Towaoc, CO	6987073	146757154	100	160 \$	17.21	10 \$	1.08	0.2
GOV-43	Mountain Sage Rd. (lights?) Mountain Sage Rd	6987074	152402376	100	3400 \$	365.67	200 \$	21.51	4
GOV-44	WATER DEPT (PW) Towaoc, CO	6987050	152405294	100	1300 \$	139.82	600 \$	64.53	6.2
GOV-51	Sunset Blvd Cable (PW) Towaoc, CO	1949	152402963	100	2000 \$	215.10	200 \$	21.51	7.5
GOV-52	Hwy 491- Cable TV Booster Towaoc, CO	6987149	144199070	100	540 \$	58.08	275 \$	29.58	748
GOV-53	199 Buckskin Turn - Cable Buckskin Turn Towaoc, CO	6987042	151348979	100	900 \$	96.80	50 \$	5.38	3

- March 2020 – Dec 1, 2020: 1.43 GWh
- Monthly meter reading
- Bill to Casino
- Casino pays Tribal Government
- Payment to Electric Cooperative
- Credit to specified bills

Residential Bill Credits						
Last Name	First Name	Service Address	City, State	Phone Numbers	Account Number	Meter Number
1	Hatch	Jane	355 Sky Rd Towaoc, CO	970.564.8284	51625001	35483
2	Alire	Michela	Green Cedars ST Towaoc, CO	970.739.3826	1619	35511
3	Box	Stefanie	1165 mountain Sage CT Towaoc, CO	970.739.1519	58071002	35752
4	Collins	Leona	Lafayette Head BLVD Towaoc, CO	970.529.0800	47688001	35774
5	King	Rita	537 N Star Lane Towaoc, CO	970.570.9201	8221	35845
6	Lang	Charleston	435 Fox Ave Towaoc, CO	970.739.8426	5043	36031
7	Talk	Annabelle	3002 Talk Rd Towaoc, CO	970.739.1426	34634001	36081
8	Ute	Zelda	438 Little Rd Towaoc, CO	970.560.8203	62754003	36097
9	Wing	Matthew	521 Rustling Willow Towaoc, CO	970.529.0800	65064001	140782123
10	Mills	ReeAnna	664 Mountain Sage CT Towaoc, CO	970.529.0540	7939	140783400
11	Summa	Kathryrn	521 N Star Lane Towaoc, CO	970.739.1680	28392002	
12	House	Darlene	1256 Green Cedar Towaoc, CO	970.570.5946	60667001	



Wrapping it Up

- Test Phase to be finished in March 2021
- Final Reporting
- Next stop White Mesa, UT

