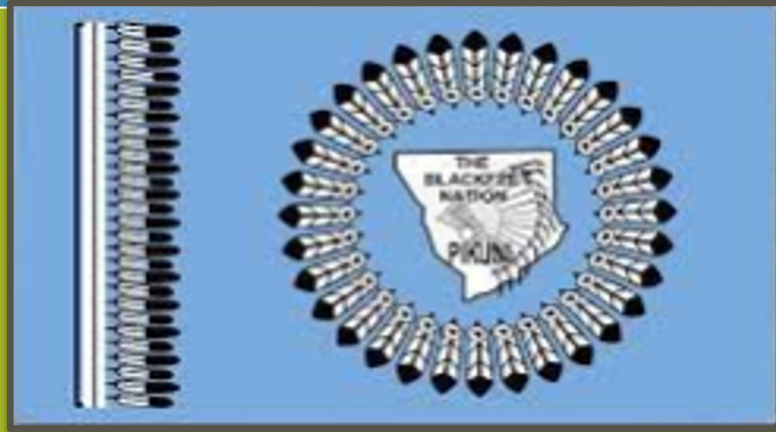




BLACKFEET COMMUNITY COLLEGE DEMONSTRATION PARK

Institutional Development, USDA Extension Interns, BFCC Energy Tech



Amskapii Piikanii

Blackfeet Community College is located on the Blackfeet Reservation which includes 1.5 million acres managed by the Blackfeet Tribal Business Council.

The Blackfeet Tribe is represented by more than 17,000 members with ancestral connections extending throughout Canada and the United States half of the members reside on the Blackfeet Reservation.

Blackfeet Community College



Chartered by the Blackfeet Tribe 1972. 1994 Land Grant Institution

Renewable Energy Demonstration Park

To advance knowledge, build capacity and develop research in Renewable Energy for students and community of the Blackfeet Nation. The property has the potential to serve as a living outdoor lab that can be contained and to support BFCC experiential learning programs, renewable energy programs and USDA Extension Greenhouse

Off Grid Geo Dome Project

Energy Technology upgrades needed for full functioning demonstration of watering system and HVAC Efficiencies



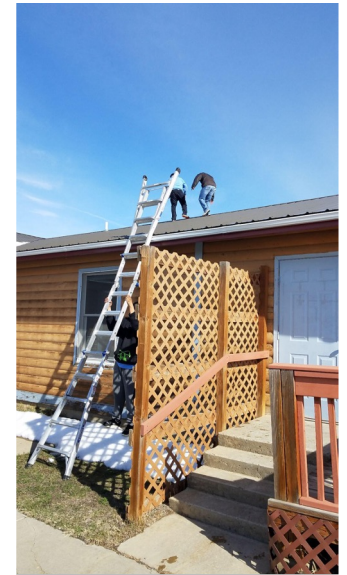
New Greenhouse Project

Assessment of the on grid system utility costs for facility

Completed 2018

Solar Panels on Dome Facility-Solar upgrade of Off Grid system

Solar panels were installed on the office attached to dome to support dome, but will now power a wash station for the new produce processing area. Dome had to be dismantled for safety purposes.



Project Challenges

- Project Staff Turn Over
- COVID-19 BFCC Campus closed to public from March 2020-June 2022
- Incomplete geothermal lines had to be redone
- Limited Student and Staff Campus Access
- Dome had to be demolition due to safety
- Maintaining an offgrid system



Dome Demolition

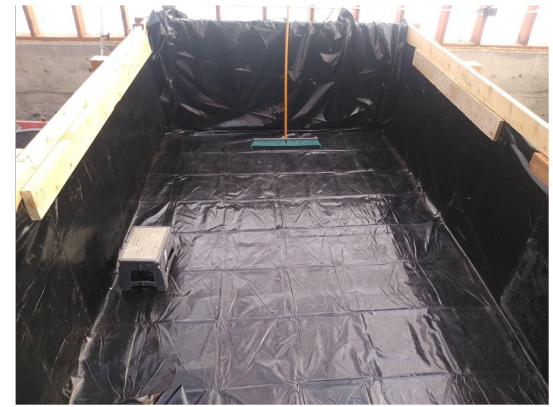


GEO THERMAL SYSTEM

BFCC greenhouse Ground-Source Heating system consists of 1000 ft ground coil

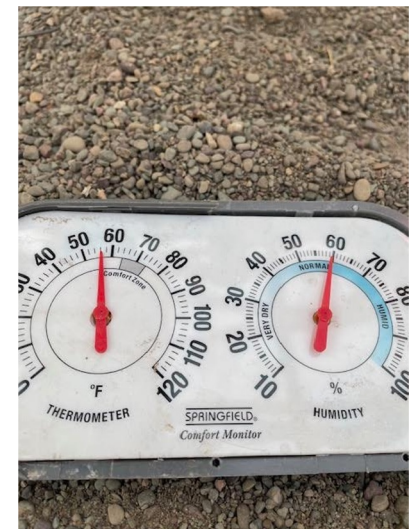


Geo Thermal



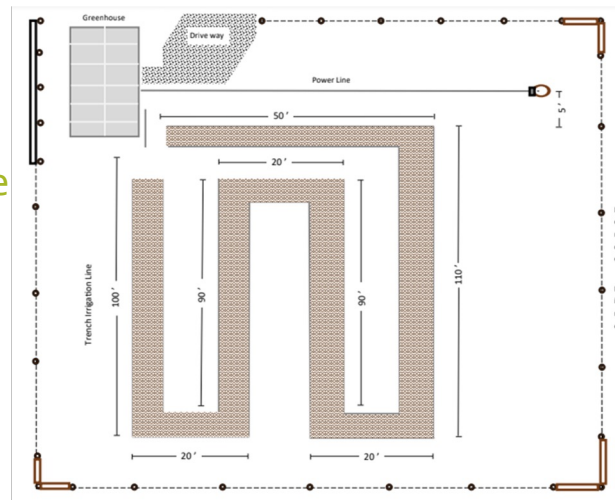
GEOHERMAL SYSTEM

- 100 gallon tank food safety Glycol/Water mix
- Glyco 55% solution and 45% water for -50 temp
- 20 psi Radiant Heating Circulator pump
- Thermal mass container 4' x 16' x 30" of 1000 ft coil located in greenhouse
- Trenches 1-2m, temp 45 to 60+ degree heating/cooling exchange
- Life span 50-plus yrs

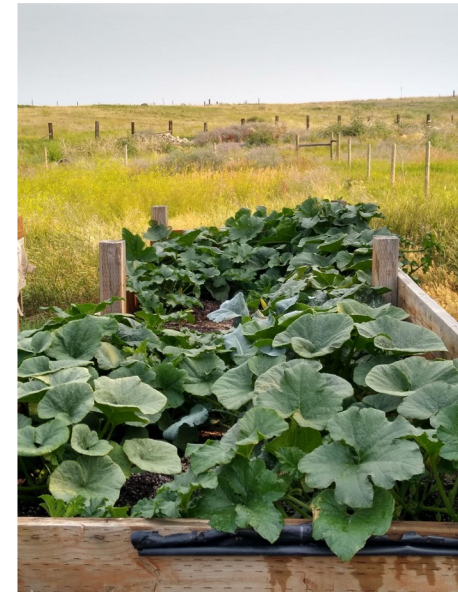


GEO THERMAL SYSTEM

- Consistently grow cool/warm season crops through winter and summer season
- Improve tank fluid to increase cooling and absorb heating
- Sod grass to improve heating and cooling insulation
- Provide more ventilation inside greenhouse for temp exchange
- Greenhouse average temp 63 to 85 degree



Coming Soon!!!!
Safety Protocols and Commissioning for use
of system Off Grid Water Storage
System/Solar-hydro pump



Project Goal

The goals of this project include: creating access to solar and renewable energy benefits for the Blackfeet community, generating energy cost savings for Blackfeet Community College, and creating an educational opportunity for students from schools to learn about renewable energy, explore career pathways, and participate in workforce development and hands on paid training for 10 students and community members.



2 Piikani Trainees continued on with GRID Alternatives joining the alternative energy workforce across Indian Country.



Savings 1st quarter



Red Fox Building

2021	August	September
	\$92.00	\$111.00
2020	\$325.08	\$344.30
Difference		\$233.08
	\$233.30	

Little Star

2021	\$29.00	\$29.00
2020	\$52.46	\$64.42
Difference	\$23.46	\$35.42

Muskrat Lodge

2021	\$29.00	\$35.22
2020	\$83.02	\$145.10
Difference	\$54.02	\$109.88

Medicine Shield

2021	\$29.00	\$29.00
2020	\$52.09	\$55.31
Difference	\$23.09	\$26.31

\$746.26 / 2 month

BFCC Energy Trainings



Clean Energy Innovation Fellow

Exciting News! Blackfeet Community College is proud to be one of 27 organizations chosen to host a 2023 Clean Energy Innovator Fellow as part of the U.S. Department of Energy's Clean Energy Innovator Fellowship program.

Our Mission: To advance clean energy solutions, decarbonize power systems, electrify transportation and industry, and enhance energy resilience.

Project Focus: Our Innovator will drive Tribal energy resilience planning, working closely with Tribal and community stakeholders, and collaborating with utilities to strengthen Grid Resilience Formula Grant program efforts.

Deliverables: Expect technical and narrative reports for our community.

Our Fellow will join us on November 1, 2023. He'll be on campus from November 7-9, 2023, for project planning and will also attend the Department of Energy Program Review in Denver, Colorado. Johnathon will work both remotely and engage in in-person community activities throughout his fellowship.



Meet Johnathon Kongoletos

Okii!

My name is John Kongoletos and I am an incoming Clean Energy Innovation Fellow working with Blackfeet Community College. During the coming year, I'll be helping the community develop comprehensive energy resilience metrics and sustainability plans, encouraging healthy buildings, and assisting with energy- and buildings-related concerns along the way. I bring a background in building technology with experience in thermally autonomous housing design in India, airborne contaminant distribution (indoor air quality), electric vehicle design, and sustainable energy systems. Overall, I'm a hands-on, bottom-up engineer who is happily stuck in a learning mindset and enjoys exploring how people interact with their energy environment. While I will be primarily based in the New York City suburbs, I look forward to being on campus to help unravel the challenges and collectively build plans grounded in an achievable reality. Outside of my professional life, I enjoy beach running, trail biking, hiking, kayaking, and entry-level car maintenance. I'm also starting to dabble in astronomy, but will freely admit that I'm still in the information-sponge/wonder stage at our local observatory. With so much to learn, I look forward to meeting you in person, learning together, and building towards a better future.

See you soon,
John



TRANSITIONING TRIBAL COLLEGES AND UNIVERSITIES TO CLEAN ENERGY –

2023 AWARD

\$792,630 174 kW

Microgrid

Training for 3
students



Project Overview

The Blackfeet Community College Transition to Clean Energy Project will install a **147.6 kW DC ground-mounted** Solar Photovoltaic (PV) system on the Blackfeet Community College (BFCC) campus. This project will build off previous solar installation efforts to transition the campus to renewable energy and will **offset 120% of BFCC's energy usage**. At a cost of **\$700,926.3**, GRID Alternatives (GRID) will function as the Contractor and Trainer for this project. The **installation and training** will take approximately 10 weeks and the system will be approved and interconnected by the local utility, Glacier Electric Co-op. At least 3 students will be recruited by BFCC to go through GRID's Installation Basics Training (IBT) program. During its 25 year lifetime, the system is estimated to **produce 4,801,209 kWh of clean energy and save BFCC \$432,109 in energy costs**.

Q&A

THANK YOU

Blackfeet Community College

USDA Extension staff and interns

Piikani Knowledge Carriers

Blackfeet Tribal Business Council 2016-2020

Institutional Development

Department of Energy Office of Indian Energy

Blackfeet Community College Workforce Development

Blackfeet Community College Facilities

First Nations Development

GRID Alternatives

Clean Energy Fellow ORIS and DOE