

Upper Midwest Inter-Tribal EV Charging Community Network

Native-led public-private partnership addressing
plug-in electric vehicle (PEV) barriers for Tribal members on 23 Reservations



NATIVE SUN
COMMUNITY
P O W E R
DEVELOPMENT

P.I. - Robert Blake
Native Sun Executive Director



June 13, 2023



sage

Co-P.I.
Joseph McNeil
SAGE General Manager

*Creating fast-charging corridors to connect Tribal Reservations with job centers,
economic centers, medical providers, and other critical services*

Overview: Upper Midwest Inter-Tribal EV Charging Community Network

- Timeline:** 3/1/22 – 5/31/25, 37% complete (39 months)
- Budget:** \$13.9M Total Project; \$6.7M DOE Funding, \$7.2M Cost Sharing
FY22 DOE Funding: \$204K
- Barriers:** Historically under-resourced and underserved rural communities;
limited access to PEVs suitable for remote cold weather areas



Leads: Robert Blake, Principal Investigator;
Joseph McNeil, Co-Principal Investigator; Lisa Daniels, Project Director

Key Partners: Native Sun, Standing Rock (SAGE) Renewable Energy Power Authority, American Lung Association/MN & ND Clean Cities, Connexus Capital, eFormative Options, Minnesota Center for Energy & Environment

Supporting Partners: Minnesota Pollution Control Agency, Minnesota Power, OtterTail Power, Xcel Energy, ZEF Energy

Community Partners:

- Grand River Casino & Resort
- McLaughlin High School
- Ponemah Trading Post
- Prairie Knights Casino
- Red Lake Agricultural Department
- Red Lake Family & Children Services
- Red Lake Immersion School
- Red Lake Nation Fisheries
- Red Lake Oshkiimaajitahdah Workforce Center
- Red Lake Seven Clans Casino & Hotel
- Red Lake Trading Post
- Sitting Bull College
- Standing Rock Public Transit



Project Objectives: Model Program



Leveraging real world data and lessons learned from Tribal communities, we're developing, demonstrating, and deploying a replicable program for expanding clean and sustainable electrified transportation to underserved communities through PEV and EV supply equipment (EVSE) deployment, data analysis, education, and outreach

- **Task 0 - Project Management and Planning:** Developed and maintaining Project Management Plan (PMP) according to Federal Assistance Reporting Checklist and Instructions; managing and implementing project according to PMP
- **Task 0 - Kick-Off Meeting:** Participated in project kickoff meeting with DOE at project initiation
- **Task 1 - Charging Infrastructure:** Identified, procured, and installing new EV charging infrastructure and signage
- **Task 2 - Vehicle Deployment:** Identified and procuring PEVs, installed data loggers and collecting telematics/usage information and other baseline data on fossil fuel-powered vehicles to be replaced by, or are used similarly to, anticipated EVs to be deployed; will use data to compare PEV operating costs and calculate emissions reductions
- **Task 3 - Technology Development and Deployment:** Outlined baseline metrics/data needs and Key Performance Indicators (KPIs) for comparing new technology deployments with respect to baseline
- **Task 4 - Education, Outreach & Engagement:** Developing messaging, communications, and promotional materials for use across all project components; created and executing plan to share experiences with audiences nationwide



Project Objectives: Support of VTO Technology Integration Goals



*Electric Nation is working to create a sustainable ecosystem to expand equitable access to clean, affordable EV transportation and improve **fuel diversity**, increase **local resiliency**, and reduce **GHG emissions** for rural, historically under-resourced and underserved Upper Midwest Tribes with:*

- 16 new Light Duty PEVs to test and demonstrate their potential in remote cold weather areas, reducing gasoline
- 3 new Medium Duty PEVs: transit shuttle and 2 electric school buses suitable for harsh winters, reducing diesel use
- 60 new Level 2 public and curbside EV chargers at community gathering spots, Tribal colleges, family & health care providers, and other key destinations
- 55 new DC Fast Chargers on Reservations and vital travel routes
- 52 education/outreach/workforce training events to engage and educate Tribal members, rural auto dealership sales staff, and first responders

IMPACT: Catalyzing energy self-determination and new job opportunities, our project is improving Tribal community access to diverse transportation fuel sources, increasing infrastructure reliability and resilient alternative fuel, expanding transportation options, and reducing climate impacts through cleaner transportation



Project Approach: Budget Period 1 Milestones

Project Launch & Engagement

Locations of Tribal charging infrastructure determined and installation beginning; assessment of current fleet vehicle uses informing purchase of EVs and their routes for deployment

BP 1 Milestone	Type	Description	Progress
Level 2 Site Locations Finalized	Technical	All locations for publicly available Level 2 EVSE installations on Red Lake and Standing Rock Reservations determined	✓ February 2023
Vehicle Needs Assessment	Technical	All Tribal fleet participation confirmed	✓ February 2023
Fast Charging Locations	Technical	All site locations for Red Lake & Standing Rock DCFC evaluated for suitability	Expected May 2023
Vehicle Purchases	Technical	Purchase orders for all project vehicles placed	Expected May 2023
Charging Infrastructure Installations	FY23 Go/No-Go	≥75% of planned publicly available Level 2 EVSE on Red Lake and Standing Rock Reservations installed and operational	Expected May 2023





Project Approach: Budget Period 2 Milestones

Project Implementation & Testing

Vehicles to be put into service; additional charging infrastructure to be installed

BP2 Milestone	Type	Description
Fleet Charging Preparation	Technical	All fleet locations will be evaluated to finalize plans for EVSE locations and installations, with assessments completed
Level 2 Charging Installations	Technical	All planned public Level 2 EVSE on Standing Rock and Red Lake Reservations will be installed
Safety Trainings	Technical	Safety training will occur at both Red Lake and Standing Rock Reservations
Vehicle Deployment	FY24 Go/No-Go	All available vehicles will be in active service



Any proposed future work is subject to change based on funding levels



Project Approach: Budget Period 3 Milestones

Analysis, Community Outreach & Reporting

Performance of deployed EVs and use of charging equipment to be monitored; project partners to document and share their experiences to inform future pathways to expanding electrification



BP 3 Milestone	Type	Description
Communications Materials	Technical	Tribal case studies, project overviews, and other collateral material will be completed
Dealership Trainings	Technical	All dealership trainings will be completed
Travel Corridor DCFC	Technical	All DCFC will be sited along highway travel corridors in service
Benefit Quantification	Technical	Report comparing costs and operations of EVs to traditional combustion counterparts will be prepared for Red Lake and Standing Rock

Any proposed future work is subject to change based on funding levels

Approach: “Electric Nation”

Increasing public familiarity with clean transportation options and establishing EV corridors from rural Reservations to key medical, educational, and metro destinations, team is working to:



- Deploy commercial, passenger, and transit EVs plus related equipment to test and demonstrate their potential
- Catalyze energy self-determination and new job opportunities
- Expand access to benefits of electrified transportation to more Tribal members
- Collect/share objective data & lessons learned that can inform future research needs and provide insights to local communities and stakeholders



Utilities and state agencies are providing support to electrify highways serving the region’s Tribal communities; DOE funding is adding EV chargers on frequently traveled routes from Standing Rock & Red Lake Reservations to critical destinations and along the Native American Scenic Byway

Project Accomplishments and Progress



Key Results: *Benefiting members and fleets of 23 Native Nations in MN, ND, & SD, U.S. DOE funding is demystifying and increasing access to EVs and EVSE, enabling underserved Tribal communities to share EV economic and environmental advantages, reducing hesitancy and range anxiety for use in cold climates*

Milestone	Description	Details
Level 2 Site Locations Finalized	All locations for public Level 2 EVSE installations on Red Lake and Standing Rock Reservations determined	Red Lake Trading Post, Red Lake Oshkiimaajitahdah Workforce Center, and Ponemah Trading Post in MN; Sitting Bull College in ND; Grand River Casino and McLaughlin High School in SD
Vehicle Needs Assessment	All fleet participation confirmed	Native Sun, Red Lake Immersion School, Red Lake Fisheries, Red Lake Agricultural Department, Red Lake Family & Children Services, SAGE, Sitting Bull College, Prairie Knights Casino, Grand River Casino and Resort, Standing Rock Sioux Tribe (SRST) Transit
Fast Charging Locations	All site locations for Red Lake and Standing Rock DCFC evaluated for suitability	Minneapolis, Seven Clans Casino and Hotel, MN; Sitting Bull College Transit Office, SRST Government Center, and Prairie Knights Casino, ND; Grand River Casino and Native American Scenic Byway (2), SD

- ✓ **FY23 Go/No-Go:** 6 Level 2 EVSE ordered, delivered, installed; most BP1 funds spent last 2 months for EV purchase order deposits
- Team worked with Tribal fleets to identify and prioritize needs to collect pricing, bids, and baseline data
 - Legal agreements executed with host sites confirming their participation; solicitation for EVSE installation issued
 - On track with approved budget, purchase order commitments/spending within 20% of funds available for BP1



Project Accomplishments and Progress

- ✓ Tribal department leaders have gained knowledge on EV and EVSE capabilities for fleet operations and **cold weather impacts**
- ✓ Viable EV options confirmed able to operate for Tribal fleets' **desired ranges in cold climates**
- ✓ Monthly virtual Electric Nation Work Group and Leadership Council meetings documented; team utilizing project management platform to coordinate among entities and ensure timely engagement
- ✓ “Electric Nation” branding and website advanced to Tribal audiences at events and via social media
- ✓ Data collection and host site legal agreements executed; long-term EVSE maintenance plans created
- ✓ Procurement policy developed to select electricians and EVSE vendors
- ✓ *Tribal communities receptive to placement and use of EV charging stations, sited to optimize performance*



Project Accomplishments: Market Impact and Sustainability

6 New Tribal Level 2 public EVSE

- ✓ Red Lake Trading Post in Red Lake, MN
- ✓ Red Lake Oshki Center in Redby, MN
- ✓ Ponemah Trading Post in Ponemah, MN
- ✓ Prairie Knights Casino in Fort Yates, ND
- ✓ Sitting Bull College in Fort Yates, ND
- ✓ Grand River Casino in Mobridge, SD

Logbooks printed and automatic data loggers installed on vehicles in 7 Tribal fleets



Date	\$/gallon or \$/kWh	# persons in vehicle (incl. driver)	Trip purpose

- ✓ Red Lake Family and Children's Services
- ✓ Standing Rock Transit
- ✓ Prairie Knights Casino
- ✓ Grand River Casino and Resort
- ✓ Sitting Bull College
- ✓ Red Lake Fisheries
- ✓ Red Lake Agriculture Department

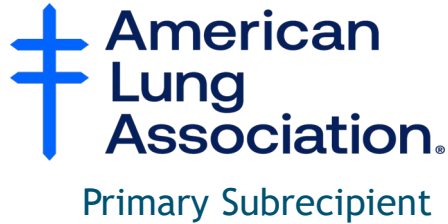
Team agreed to omit individual partner logos in EVSE design and utilize Electric Nation logo only, creating a sense of unity.

QR code was established for access to project information. Project website: www.electriconation.info





**NATIVE SUN
COMMUNITY
POWER
DEVELOPMENT**
Prime Recipient



Primary Subrecipient



Lower-tier R&D Subcontractor



Lower-tier PM Subcontractor



Administration Subcontractor



sage

Primary Partner
Lower-tier
Subcontractor

- ✓ Project team members and partners have worked together effectively to design and execute model program
- ✓ Joint education, outreach, and engagement efforts are informing target audiences, training workforce on vehicles and equipment
- ✓ Thoughtful collaborations sharing lessons learned with other native Nations and communities
- ✓ *Enthusiastic involvement by rural utilities & cost-sharing partners*



Primary Native Nation Partners

Collaboration and Coordination Among Project Team: Supporting Partners



ZEF ENERGY

Primary Cost Share Partners

Collaboration and Coordination Among Project Team: Community Partners

Minnesota

- Ponemah Trading Post
- Red Lake Agricultural Department
- Red Lake Family & Children Services
- Red Lake Immersion School
- Red Lake Nation Fisheries
- Red Lake Oshkiimaajitahdah Workforce Center
- Red Lake Seven Clans Casino & Hotel
- Red Lake Trading Post

North Dakota

- McLaughlin High School
- Prairie Knights Casino
- Standing Rock Public Transit

South Dakota

- Sitting Bull College
- Grand River Casino & Resort





Contributions to Energy Equity and Environmental Justice

- Project team working earnestly to ensure Upper Midwest Tribes not “left behind” in transition to clean energy
- Two new workforce training programs for Red Lake and Standing Rock Reservations
- PEVs and related equipment will include 2 solar trailers for pow-wows and educational events plus 3 freezer cubes for transporting Red Lake fish to markets
- PEVs will be utilized in fleets for Family & Child Services, agriculture, tribal college, buses for culture and language immersion school, and community shuttle service
- Availability/scarcity of EVs, EVSE supply chain delays, and recent price increases pose challenges and barriers for project
- Electric Nation’s thoughtful legal agreements can facilitate replication on Tribal land in additional geographic areas and with additional technologies



Any proposed future work is subject to change based on funding levels



Summary: Upper Midwest Inter-Tribal EV Charging Community Network

**24+ Partners including Participating Fleets, Supporters,
and Collaborators Engaged in First Year**



Project Objectives	Address PEV barriers for Upper Midwest Tribal members, advancing equitable access to clean, affordable transportation in multi-family housing and rural, underserved Tribal communities facing harsh winters	Demonstrate PEVs in Tribal communities and provide access to advanced vehicles and EVSE to community members disproportionately affected by transportation inequities
Impact	Through installation of charging infrastructure, “connect” Standing Rock Sioux Tribe, Red Lake Nation, and 21 other Reservations with vital medical providers, job/economic centers, and government services	Lower burden of transportation costs and creating systems of clean mobility across rural MN, ND, and SD, improving access to long-distance destinations and new job opportunities
Key Outcomes	Deploy 19 commercial, residential, and transit PEVs plus related equipment to demonstrate their potential on rural Reservations and cold climates, catalyze energy self-determination, and expand access to benefits of electrified transportation	Install 55 DCFC and 60 Level 2 EVSE, providing at least one Level 2 to all 23 Native Nations in ND/SD/MN; 52 events over 3 years reaching >10,000 attendees

Next Steps: Documenting energy savings, emissions reductions, and impacts on Tribal members created by this project and developing a pathway forward to a system free of fossil fuels