Keweenaw Bay Indian Community PRESENTATION

Assessing the Feasibility of Renewable Energy Development and Energy Efficiency Deployment on Tribal Lands

DOE Tribal Energy Program Review
October 25 - 29, 2010
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Economic Developer

BACKGROUND INFORMATION

- U.S. Department of Justice
  - Community Capacity Development Office
- Alternative & Renewable Energy Committee Established by Tribal Council
- Council for Energy Resource Tribes (CERT)
  - Developed Strategic Energy Plan
- Targeted Wind Power & Energy Efficiency

Targeted Wind Power Development & Energy Efficiency

- Primarily Focused on Casino
- Secondarily for:
  - Facilities Adjacent to Casino (Cluster Buildings)
  - Government Buildings – Fish Hatchery
  - Residential

Broad Goals

- Preservation of our Natural Environment
- Self-Sustainable Power Production
- Creation of Jobs
- Cost Savings
- Revenue Generation

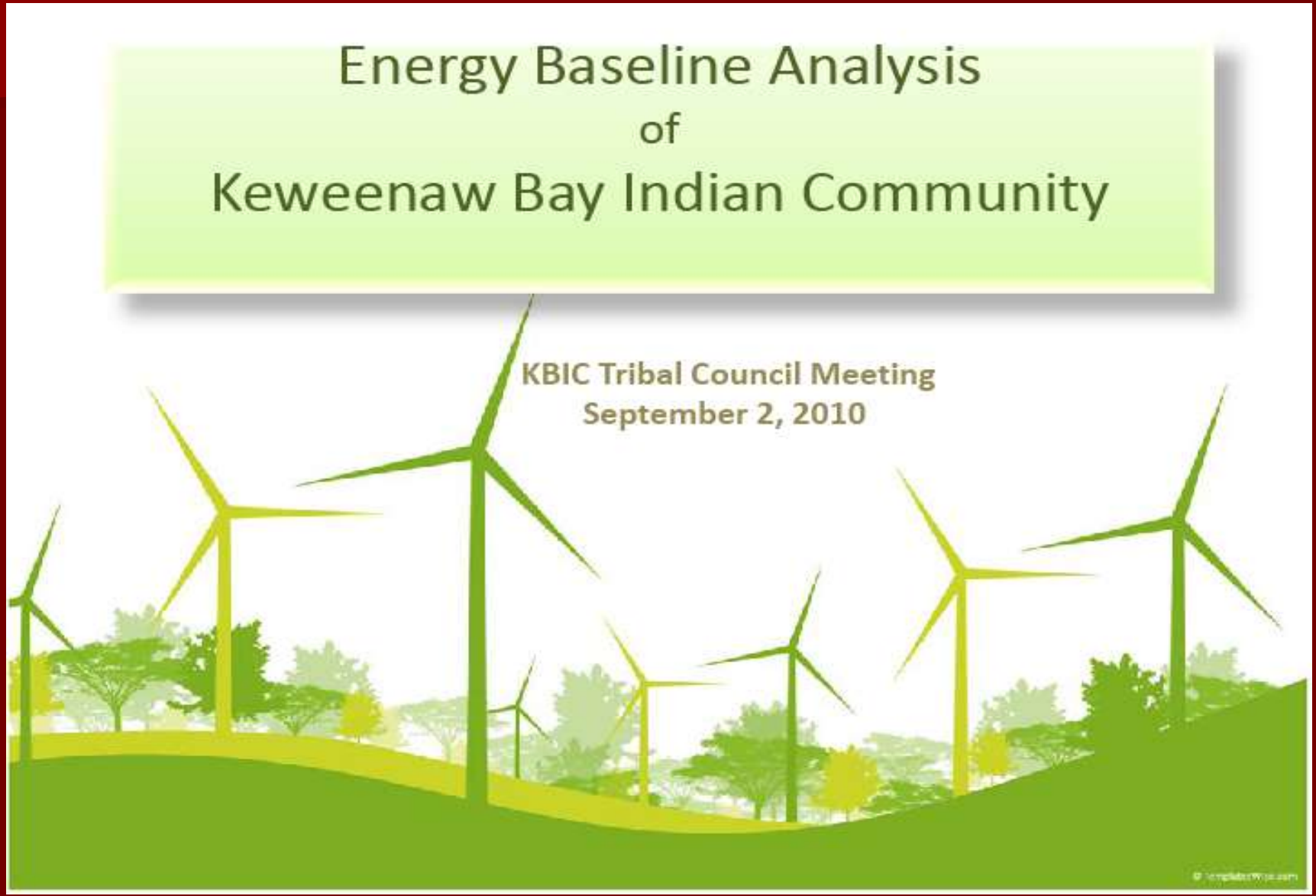
Initial Evaluations

- Bio-Fuels Production
- Solar Power
- Geo-Thermal & Wave Power
- Wind Power

Specific Target

- Wind Energy Production for Consumption
- Wind Power Manufacturing Opportunities
- Develop Green Industrial Park

Energy Consumption Analysis



Overview

- Energy Background
- KBIC Energy Baseline Analysis
  - Consumption by source
  - Consumption by facility
  - Energy Use Index
  - Energy Cost
  - Environmental Impact
- Energy Solutions

Energy Solutions

- Reduce overall energy use/demand
  - Conservation: using less, doing less
  - Efficiency: use technology to produce same end product with less energy
  - Pay-back period: 0.5 – 5 years
- Utilize renewable energy sources
  - Sustainable energy future
  - Increase self-sufficiency
  - Pay-back period: 1 – 30 years
- Result: lower environmental impact, lower* costs

Energy Baseline Analysis

- What is it?
  - Determine energy loads
    - How much energy a facility/entity uses
  - Identifies energy needs
  - Establish a baseline to compare to for energy efficiency
  - Part of Strategic Energy Planning Process
- 12-month energy consumption
- All energy sources

KBIC Energy Baseline Analysis

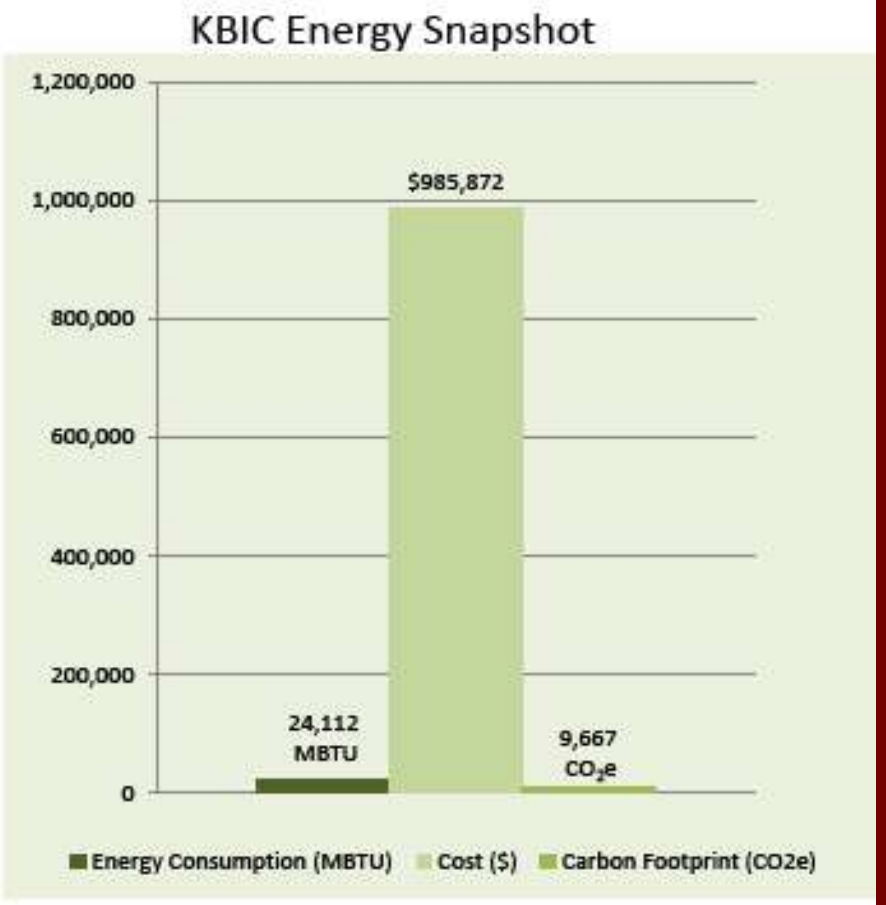
- Assess the energy usage of KBIC facilities
  - Government and Enterprise facilities (Commercial/ Light Industrial)
  - NO residential
  - NO transportation
  - Electricity, natural gas, propane utility bills
    - 2008 data, except for Enterprise facilities (2009)
  - Energy Statistics
    - Energy consumption
    - Cost
    - Environmental Impact (carbon footprint)

KBIC Energy Analysis: Facility Profile

- 32 “facilities” : 50+ buildings (loads)
  - Multiple buildings or loads (i.e. signs, pumps) of same location, tribal department combined into single “facility”
- KBIC Commercial & Industrial Buildings
  - Government Offices
  - Enterprise
    - Casinos, hotels, restaurant
    - Gas Station
    - Radio Station
  - Health Center
  - Ojibwa Community College
  - Water Treatment Plant
  - Fish Hatchery
  - Ojibwa Recreational Area

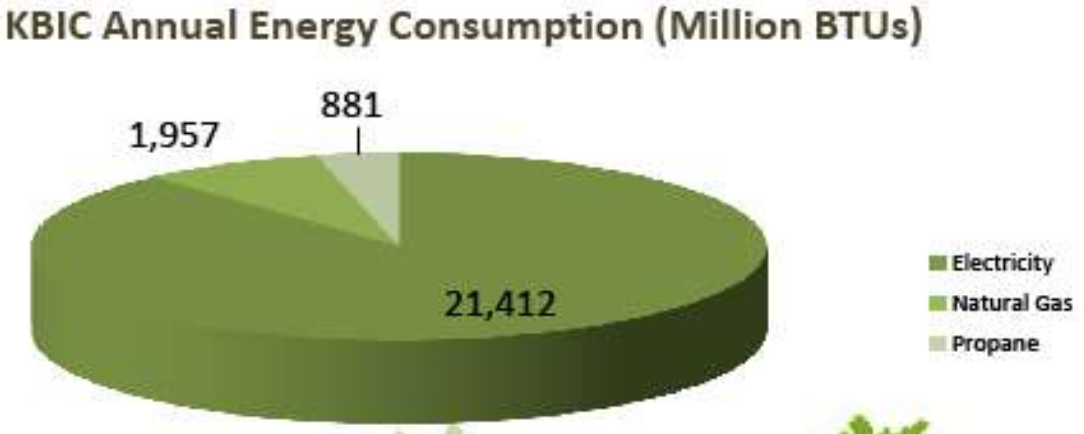
KBIC Energy Baseline

- Summary
  - Total Energy Consumption:
    - 24,112 Million BTU Annually
  - Total Energy Costs:
    - $985,872 Annually
  - Environmental Footprint
    - 9,667 metric tons CO_2 Equivalent

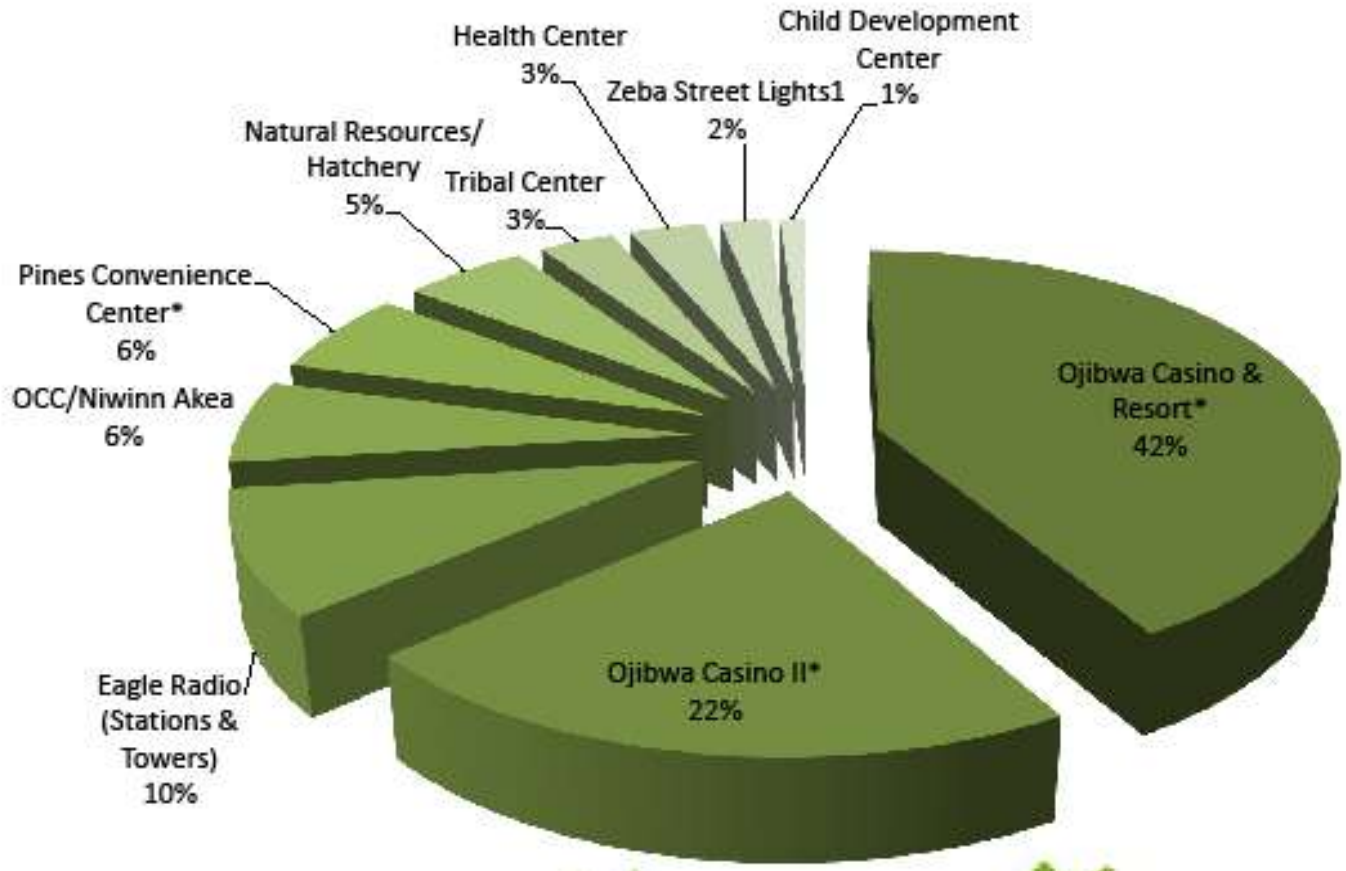


Energy Consumption by Source

Energy Type	Amount	Million BTU's	Percentage of Total
Electricity	6,273,729 kWh	21,412	87%
Natural Gas	189,961 Therms	1,975	9%
Propane	9,613 gallons	881	4%
Total		**24,112**	



% of Total Electricity for Top 10 Consumers



Electricity – Facility Breakout

Ojibwa Casino Resort Complex

Ojibwa Casino Complex *	Annual Electric Use (kWh)	Annual Cost
Casino & Lanes	1,665,200	$198,048
Motel & Restaurant	580,400	$52,705
Bingo Hall	137,600	$16,450
Four Seasons	68,840	$8,261
RV Sites	23,406	$3,203
Signs	16,735	$2,099
	2,492,181	**$328,940**

Ojibwa II

Ojibwa II Facility*	Annual Electric Use (kWh)	Annual Cost
Casino	1,294,400	$182,389
Well Pump	12,811	$2,134
Signs	10,253	$1,760
RV Sites	9,948	$1,935
	1,327,412	**$188,218**

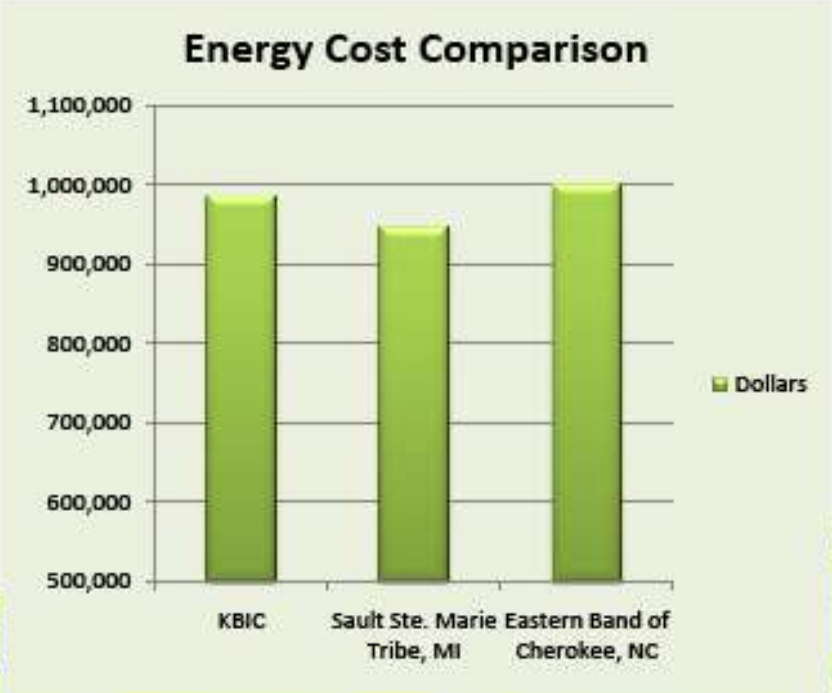
* 2009 utility data

Natural Gas Consumption by Facility

Ranking	Facility	Consumption (Therms)	% of Total
1	Ojibwa Casino & Resort Complex	50,784	27
2	OCC/Niiwin Akeaa	24,972	13
3	Marquette Airport	21,513	11
4	Health Center	11,489	6
5	Ojibwa Casino II	10,776	6
6	Tribal Police	8,681	5
7	Tribal Center	8,510	4
8	Senior Center	7,963	4
9	Former Tubcraft	7,877	4
10	Childhood Development Center	7,770	4
11	OCC Annex	7,034	1
12	Pines Convenience Center	5,876	3
13	Commodity Foods	3,400	2
14	OCC Library/Science Lab	2,899	2
15	Social Services	2,764	1
16	Cultural Center	1,541	1
17	Tribal Court	1,384	1
18	Eagle Radio	1,281	1
19	Even Start	1,071	1
20	Planning & Development	951	0.5
21	Anokii	752	0.5
22	USDA Bldg.	673	0.5
	Total	**189,961**	

Total Energy Costs

Energy Source	Cost
Electricity	$776,877
Natural Gas	$189,236
Propane	$20,759
Total	**$986,872**



How do our energy costs compare with that of other tribes?

Total Environmental Impact

Energy Source	CO_2 (lbs)	SO_2 (lbs)	NOx (lbs)	Hg (lbs)
Electricity	10,458,920	19,832	39,425	0.136814
Natural Gas	2,222,544	-	-	-
Propane	105,743	-	-	-
Total Pounds	**12,787,207**	**19,832**	**39,425**	**0.136814**
Metric Tons	**9,667**	**15**	**30**	

- Equivalent to
  - **1,848 cars** off the road
  - Carbon sequestered by **247,872 seedlings** grown for 10 years
  - Carbon sequestered by **2,061 acres** of pine forest

Energy Solutions – Supply Side

- Renewable Energy Sources
  - Load Clusters
    - Casino complex cluster – 3,000 MWh
  - DOE Wind Feasibility Study

Summary

- Energy savings potential – conservation & efficiency
- Energy audit focus
- Energy solutions
  - Efficiency FIRST then Renewables
- Next Steps:
  - Compile report & update Strategic Energy Plan
  - Others?
    - Compile residential & transportation energy
    - Implement savings measures & track progress

Check-list for Strategic Energy Plan

- ✓ Celebratory Community Feast
- ✓ Identify Tribes to Evaluate
- ✓ Meet with Transmission Company (ATC)
- ✓ Identify Sources for Technical Assistance
- ✓ Obtain Quotes from Consultants
- ✓ Research Sources for Funding (ongoing)
- ✓ Preliminary Select Locations

Check-list (continued)

- Install Monitoring Towers
- Complete Feasibility Study
- Identify Successful Projects
- Visit Projects (Prefer Tribal Projects)
- Select Ideal Model Project
- Determine Project for Implementation

Conducted Planning to Evaluate How To:

- Capitalize on our Strengths
- Goals in Harmony with our Core Values
- Action Plan, Specific Goals and Timelines
- Ensure We Follow-up and Move Ahead

Short-Term Goals (18 mo.)

- Monitor Wind at our Cluster Facilities near Casino
- Monitor Wind at Fish Hatchery
- Evaluate Cost of Wind Turbines or Small Wind Farm
- Project Revenue and Savings from Installing Turbines
- Conduct Preliminary Engineering for Turbines

Short-Term Goals (continued)

- Continue to Assess Effect on Community
  - Environment
  - Finances
  - Culture
  - Habitat
  - Jobs
- Determine Feasibility of Project by Facts

Mid-Term Goals (1 – 5 Yrs.)

- Seek Partners to Manufacture Turbines
  - First Seek Other Tribes as Partners
  - Secondarily, Local Non-Native Community
- Create Wholly Owned Tribal Corporation
  - Establish Subsidiary Manufacturing Corp.
- Apply for SBA Section 8(a) Certification
- Utilize Grant & Loan Guarantee Programs
  - Federal Programs: DOE, BIA, USDA, Other

Vacant Facility

Located on Reservation

- Modern updated manufacturing facility with 35' ceilings in the high bays & 25' in the low bays, 8" reinforced concrete floor, 7 high speed overhead exterior doors, 4 restrooms in the office areas & 4 in the production facility. 2 concrete loading docks, 1,500 KVA of 480 volt 3 phase electrical power with overhead buss bars for weld cells, 3 inch air lines throughout the assembly area (closed loop system) & 1 inch in the welding areas, diesel fume extraction system, 4 foot fluorescent lighting, abundant parking. Near fabricating & paint shops, on highway and rail line.

Create Jobs & Revenue

- Utilize Existing Assets
  - Locating Business on Reservation
  - Utilizing Skilled Workforce
- Exercise Sovereign Authority
  - Organized Under Laws of Keweenaw Bay
- Leverage Federal Incentives
- Maintaining Core Values and Vision

Ultimate Goals

- Protect our Environment
- Create Jobs & New Revenue
- Become Self-Sustainable
- Manufacture and Install Wind Turbines

KBIC Staff says, “Thanks!”

- **DOE Project Officer: Lizana K. Pierce**
- **Tribal Energy Program: Jami Alley**

Keweenaw Bay Indian Community Tribal Council says "THANK YOU!"

QUESTIONS & CONTACT INFO.

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