Keweenaw Bay Indian Community PRESENTATION

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

November 14 - 18, 2011

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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

U.S. Dept. of Justice

- Community Capacity Development Office
- Conducted on-site visit, June of 2008
- Working with Department of Treasury
- Economic Development Analysis
- Legal Infrastructure

A Community Planning - Economic Development Assessment – Market Analysis – Legal Survey Report on the Keweenaw Bay Indian Community

An Economic Development Initiative
Sponsored by
Community Capacity Development Office, U.S. Department of Justice
&
Community Development Financial Investment Fund, U.S. Department of Treasury

November 2008

Highlights of CCDO Assessment

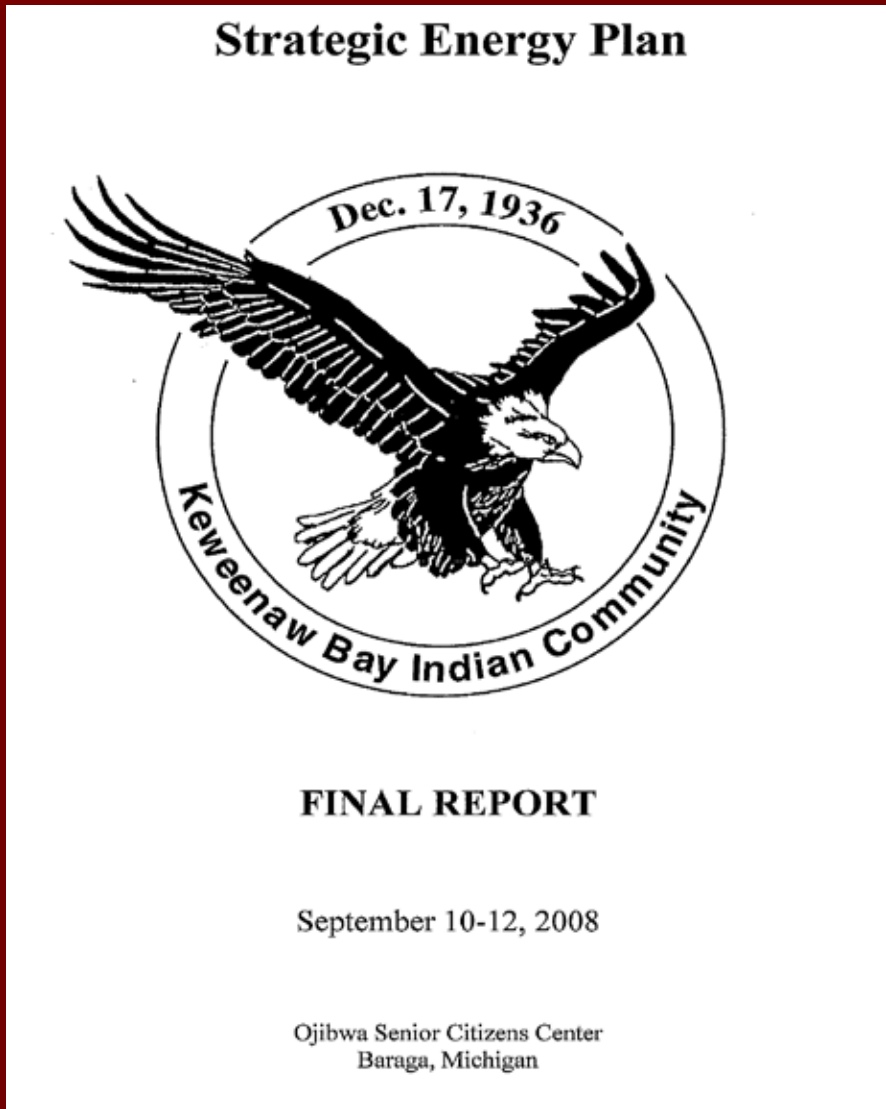
- Core Values: land, air, water & life
- Lake Superior is center of Community
- Strength of community: Manufacturing
- Goals: Reduce fossil fuels & carbon emissions
- Create jobs for community
- Diversify economy from grants, casinos and tobacco

CCDO Recommendations

- Create Legal Infrastructure
  - Business Codes
  - Model after successful Tribes
  - Used Ho-Chunk model, Lance Morgan
- Identify values, goals and vision
- Prepare Strategic Plan

Strategic Energy Plan

- Council of Energy Resource Tribes CERT
- Assisted Tribe with creating energy plan
- Plan used as guide to determining course of action



Broad Goals

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

Evaluated by Committee

- Committee for Alternative & Renewable Energy
- Members of Committee appointed by position:
  - Voting Members: Council, Economic Development Committee Chair, Natural Resources Committee Chair, Cultural Committee Chair, Maintenance, Grants
  - Advisors: CEO, NRD Director, Economic Developer

Initial Evaluations of Committee

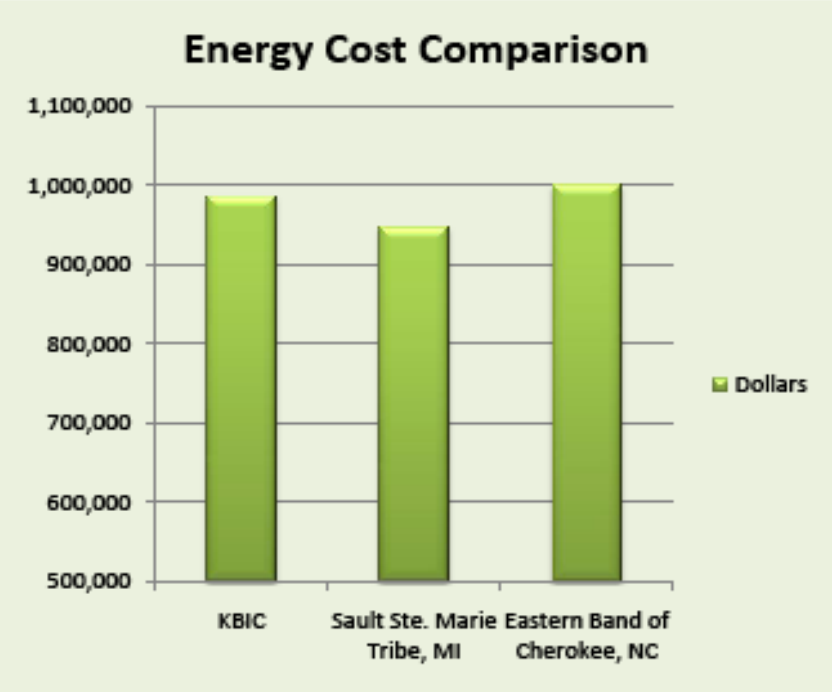
- Bio-Fuels Production
- Solar Power
- Geo-Thermal & Wave Power
- Wind Power

Targeted Wind Power Development & Energy Efficiency

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

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?

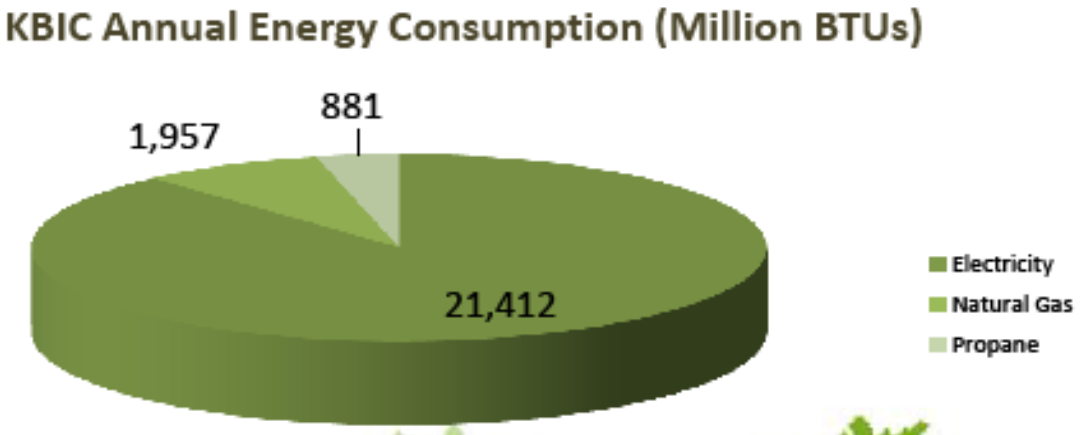
Total Environmental Impact

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 Consumption by Source

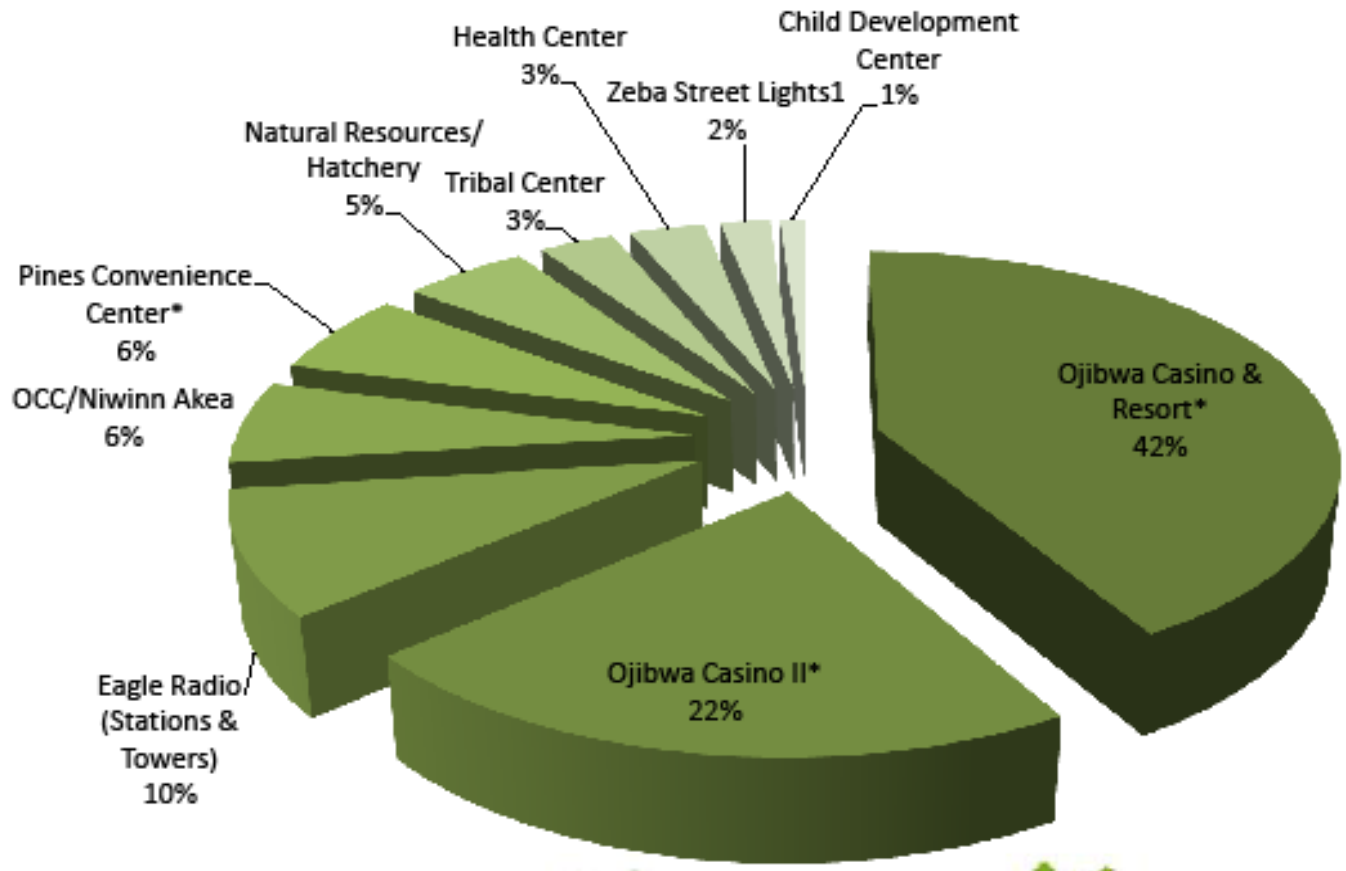
Energy Type	Amount	Million BTU's	Percentage of Total
Electricity	6,273,729 kWh	21,412	87%
Natural Gas	189,961 Therms	1,975	9%
Propane	9,613 gallons	881	4%
Total		**24,112**	



Specific Target

- Electrical Consumption and Production
- Energy Efficiency
- Wind Power Manufacturing Opportunities
- Develop Green Industrial Park

% 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

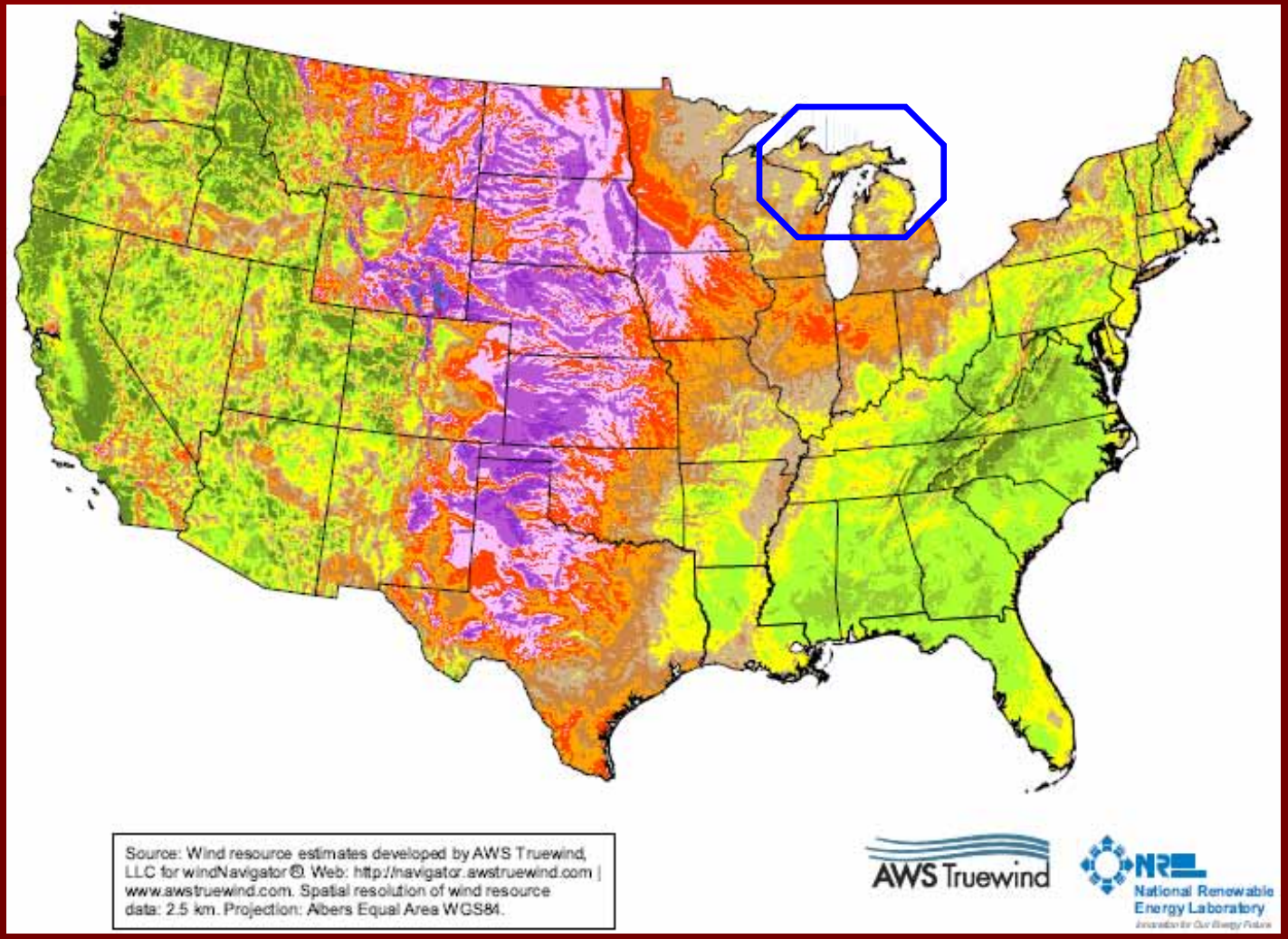
Ojibwa II Facility*	Annual Electric Use (kWh)	Annual Cost
Casino	1,294,400	$182,389
Well Pump	12,811	$2,134
Signs	10,253	$1,760
RV Sites	9,948	$1,935
	1,327,412	**$188,218**

* 2009 utility data

Evaluation of Wind for Electricity

- Based upon our research, the CARE recommended evaluating wind capacity for producing electricity
- If feasible, Tribe desires to install wind turbines
- Preference to manufacture or assemble alternative systems within community

US Wind Resource - Speed



Received DOE grant, hired consultants

- Consultants review our preliminary sites for MET towers
- Best site is old airport where Tribe plans to build a new casino

First Obstacle at Site

- Applying to have land placed into Trust
- Want to monitor wind capacity at site
- Must comply with Township permitting regulations

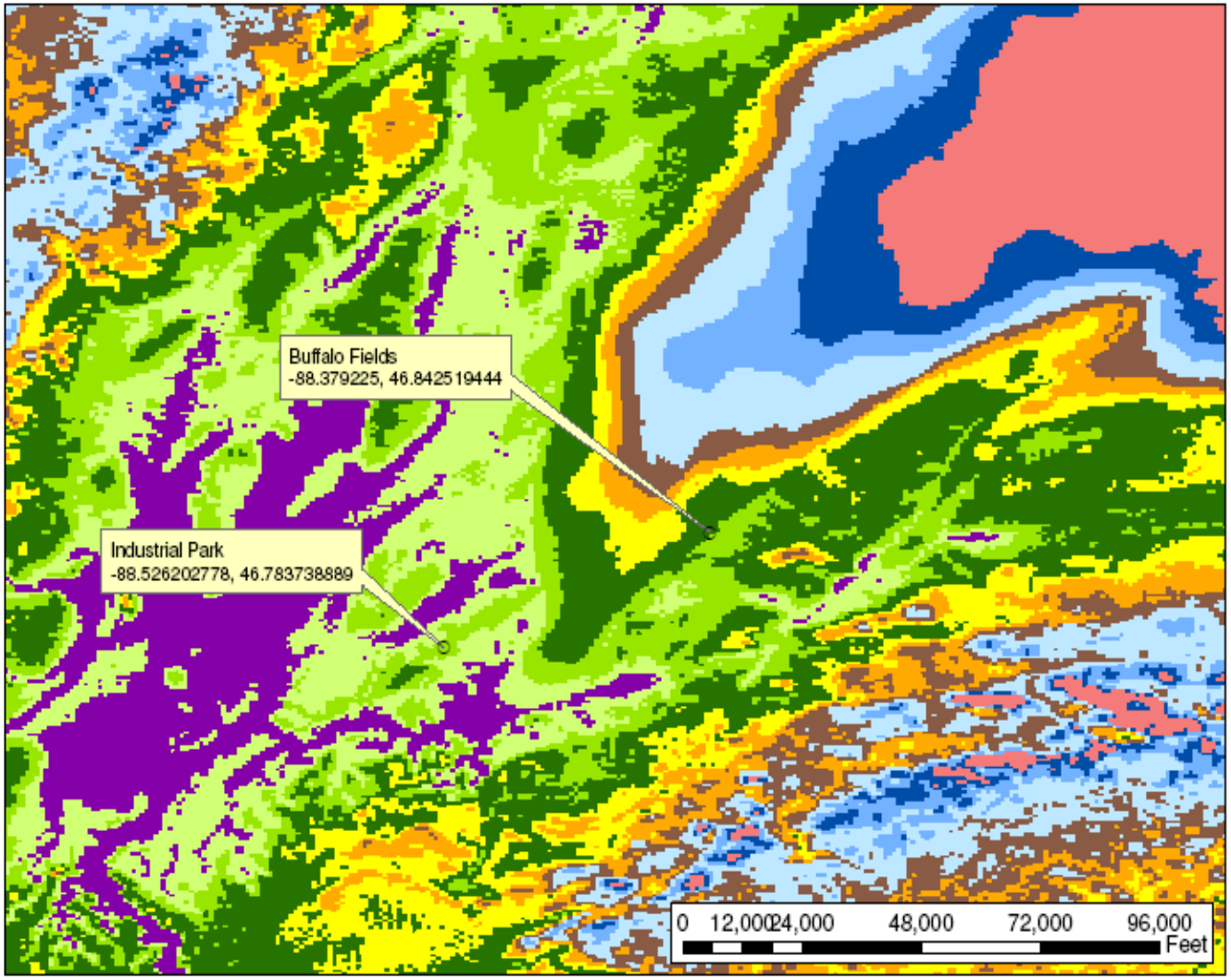
NOAA Radar Antenna

- Proceeding to erect MET towers prior to winter snowfall, 2010
- Discover proximity to NOAA Radar Antenna
- National Oceanic & Atmospheric Administration (NOAA) has a radar antenna on the property adjacent to the former airport and Township regulations prohibit the installation of a monitoring tower within 4000' of NOAA's radar antenna.

Alternate Sites Selected

- Unable to complete Environmental Assessment and Install prior to winter
- Begin preparations for installation in Spring of 2011

Michigan Wind Map (including two KBIC sites)



m/s

- 4.1 - 4.3
- 4.4 - 4.9
- 5 - 5.6
- 5.7 - 5.8
- 5.9 - 6
- 6.1 - 6.3
- 6.4 - 6.5
- 6.6 - 6.7
- 6.8 - 6.9
- 7 - 7.2
- 7.3 - 7.4
- 7.5 - 7.6
- 7.7 - 7.8

First MET Tower Installed

Successful Tower Installation

- First 60 meter NRG towers being installed
- Process smooth and successful
- Tower operational in April, 2011

First Tower Operational

- Tower operational
- Seventh Generation Energy System Crew moves on to second site

Second Site

Problem Encountered

- Second site muddy with clay base
- Crew cannot install MET Tower
- Presents Tribe with Alternatives

Alternate Anchoring System

- Mud and clay base require Alternate Anchoring System for MET Tower
- Installation delayed
- Team returns to complete installation of second met tower in June, 2011

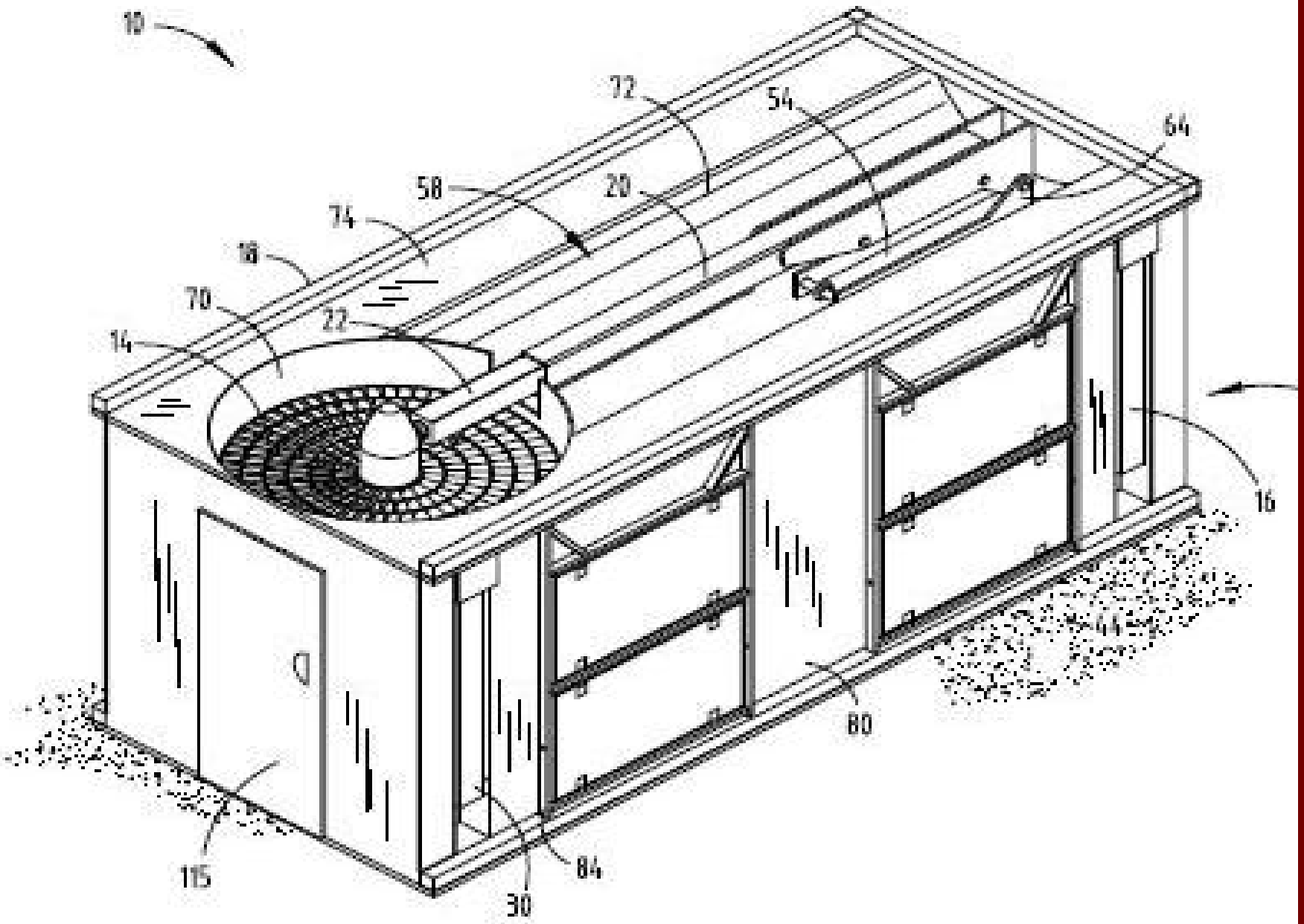
Second Tower Installed

- Alternate Anchoring System Utilized
- Second Tower Installed in June, 2011
- Both MET Towers Operational

Station Number and Name	Data Indicator	Monitoring Height (m)	Jan 2011	Feb	Mar	Apr	May	June	July	August	Sep
0203 Industrial Park	**P** Wind speed (m/s)	58			commissioned 4/20	4.9	4.1	4.2	4.3	4.3	4.1
	R Wind speed (m/s)	58				4.8	4.1	4.1	4.1	4.2	4.0
	P Wind speed (m/s)	50				4.5	3.9	3.9	3.9	4.0	3.7
	R Wind speed (m/s)	50				4.5	3.8	3.8	3.9	3.9	3.6
	P Wind speed (m/s)	40				4.0	3.4	3.2	3.4	3.3	3.0
	R Wind speed (m/s)	40				4.0	3.5	3.3	3.4	3.5	3.2
	Status / Issues	--				ok	ok	ok	ok	ok	ok
	Data Availability (%)	--				100.0 %	100.0 %	100.0%	100.0 %	100.0 %	100.0 %
0204 Buffalo Fields	**P** Wind speed (m/s)	58						commissioned 6/29	3.8	3.9	4.0
	R Wind speed (m/s)	58							3.8	4.0	4.2
	P Wind speed (m/s)	50							3.6	3.8	3.8
	R Wind speed (m/s)	50							3.5	3.7	3.9
	P Wind speed (m/s)	40							3.0	3.2	3.4
	R Wind speed (m/s)	40							3.0	3.3	3.5
	Status / Issues	--							ok	ok	ok
	Data Availability (%)	--							100.0 %	100.0 %	100.0 %

Manufacturing Opportunities

- Local fabricating shop heard about KBIC wind project
- Created X3 Portable Power System
- Utilizes Wind Turbines, Solar Panels and Diesel Generator
- Applications for remote energy production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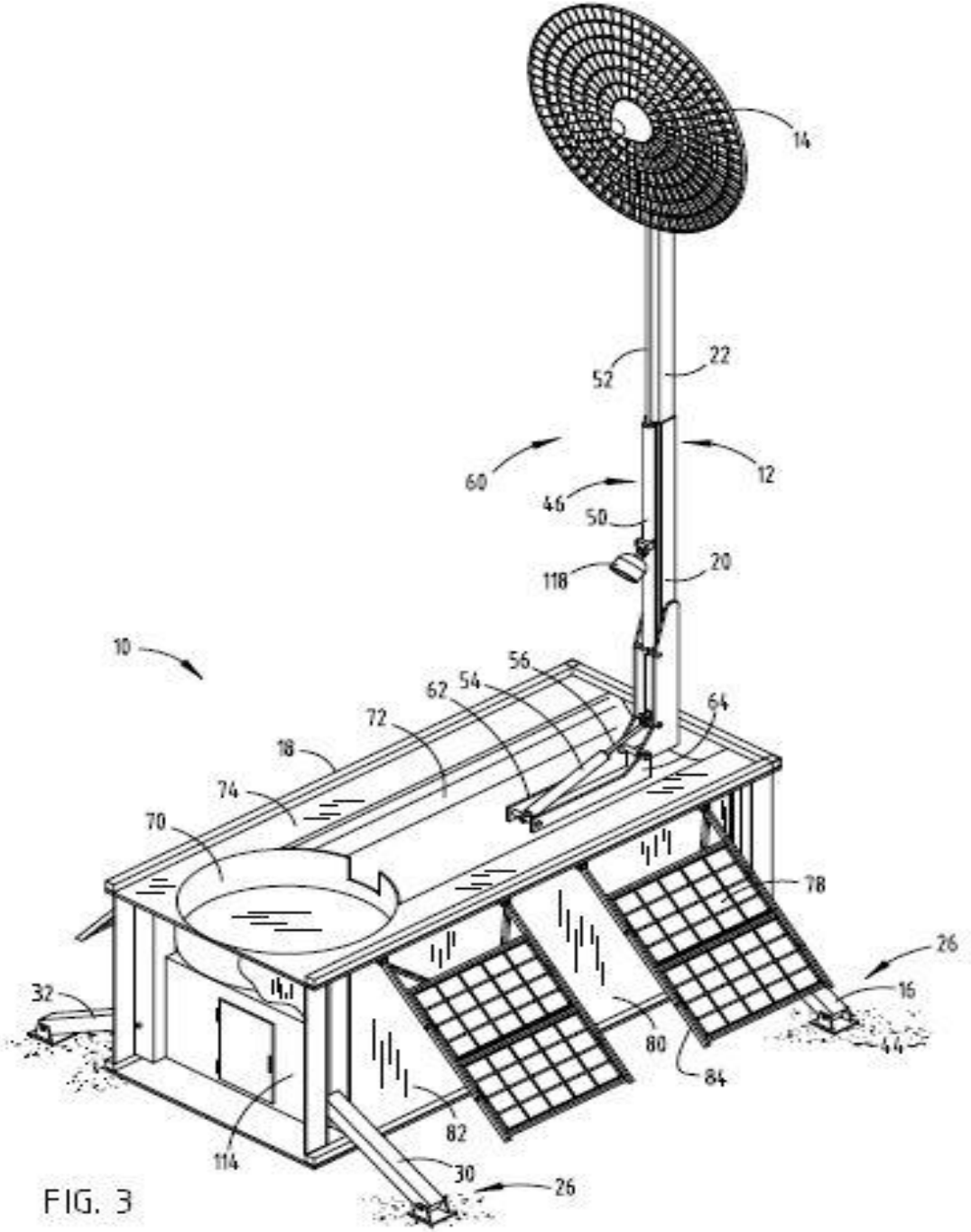
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FIG. 3

Target Market

- U.S. Military
- FEMA
- Benefits: Requires less transportation of diesel fuel
- Increases safety

Goal to Build X3 on Reservation

- Keweenaw Bay Indian Community may acquire majority ownership or create new business
- Tribe to purchase facility for assembling X3 Portable Power system
- Existing fabricating shop to retain 49% ownership of new company and do metal fabrication of box and boom

Economic Opportunity

- There are a number of vacant manufacturing facilities on the Reservation
- Community eager for Jobs
- Interest Rates are low

Need Market Support

- Local company interested in working with Tribe
- Create SBA Section 8(a) company to contract with federal government
- Met with U.S. Senator Carl Levin's staff
- Need to evaluate markets and opportunities

Assistance Requested

- Seeking Assistance to evaluate federal government's interest in purchasing
- Assistance with federal procurement
- DOI – Division of Energy & Mineral Development – Amanda, Roger Knight
- IEED – Winter, Payton Batliner
- USDA
- Any other entities available to assist Tribe

Summary

- Monitor wind capacity on Reservation
- Determine environmental benefits of alternative energy
- Conduct financial feasibility study for installing alternative or renewable energy systems
- Create jobs and generate revenue from alternative system manufacturing

Conducted Planning to Evaluate How To:

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

Short-Term Goals (12 mo.)

- Complete Wind Monitoring at our Cluster Facilities near Casino & Fish Hatchery
- Determine Environmental Impact
- Evaluate Cost of Wind Turbines or Small Wind Farm
- Project Revenue and Savings from Installing Turbines
- Conduct Preliminary Engineering for Turbines

Mid-Term Goals (0 – 3 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 Assistance & Funding Programs
  - Federal Programs: DOE, DOI, USDA, etc.

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

DOE Grant Key to Progress

- The Grant moved us from Discussing options to evaluating opportunities
- The Process is as important as the results
- Can replicate the process for other opportunities
- This Grant was a key to helping our Community move forward!

KBIC Staff says, “Thanks!”

- **DOE Project Officer: Lizana K. Pierce**
- **GO Project Monitor: Cass Gillham**
- **Tribal Energy Program: Jami Alley**
- **Kris Venema**

Keweenaw Bay Indian Community Tribal Council says “MIIGWECH” U.S. Department of Energy

QUESTIONS & CONTACT INFO.

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