Governmental Building Energy Audits &
Training in Building Energy Audit Technologies
March 24 – 27, 2014
Summary of Tribe

- Federally Recognized in 1972

- Approximately 40,000 Tribal Members

- 7 - County Tribal Service Area:
  - Eastern Upper Peninsula of Michigan
  - Approximately 1,600 Acres Held in Trust
  - Upper Peninsula – 16,452 Square Miles
  - Tribal Service Area – 8,573 Square Miles
Projects Overview

**Energy Audits**
- 29 Commercial Audits
- Energy Audit Equipment Purchases
- 25 Residential Audits of Tribal Housing Units

**Technologies Training**
- Building Analyst
- Building Envelope Professional
- Advanced Energy Audit Technologies
Photos – Energy Audits

Mary Murray Culture Camp, Sugar Island, Michigan
FLIR E40 Infrared Camera Photos
UP Engineers & Architects, Inc.
Photos – Energy Audits

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Mary Murray Culture Camp, Sugar Island, Michigan
FLIR E40 Infrared Camera Photos
UP Engineers & Architects, Inc.
Photos – Equipment
Photos – Technology Training
Projects Locations

**Energy Audits**
- Elder & Youth
- Ceremonial & Culture
- Judicial & Enrollment
- Health/Social Services
- Housing/Construction
- Environmental
- Retail, Office & Rental

**Technologies Training**
- Tribal Administration Classroom
- Test Site Provided by Tribal Housing – Stand Alone, Unoccupied Residence
- Chi Mukwa Recreation Center Classroom
Photo – Energy Audit Location

Fred Hatch Environmental Building, Sault Ste. Marie, Michigan
FLIR E40 Infrared Camera Photos
UP Engineers & Architects, Inc.
Photo – Energy Audit Location

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UP Engineers & Architects, Inc.
Chi Mukwa Community Recreation Center

Sault Ste. Marie, MI

Training Site for Advanced Energy Audit Technologies

Training Provided by Building Science Academy
Projects Participants

**Energy Audits**
- Energy Team
- Facilities Management
- Tribal Departments
- Engineering Firm

**Technologies Training**
- Environmental Department
- Health Division
- Housing Division
- Maintenance Personnel
- Recreation Center
- Technology Trainers
Projects Objectives

**Energy Audits**
- Establish Commercial Building Energy Priorities
- Acquire Blower Door and Infrared Camera Equipment for Training and Testing
- Establish Residential Energy Priorities

**Technologies Training**
- Train Tribal Personnel in Building Energy Audits and Equipment
- Conduct Energy Audits of Tribal Commercial Buildings and Tribal Housing Units
## Past Related Activities

<table>
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<tr>
<th>Energy Audits</th>
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<tbody>
<tr>
<td>● 2002 – Wind Energy Feasibility Study</td>
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<td>● 2009 – ARRA Lighting Retrofits</td>
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<td>● Energy Rebates</td>
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<td>● 2009 – 9 Energy Audits of Tribal Governmental Buildings</td>
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<tr>
<td>● Wind Energy Anemometer Training</td>
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<td>● Wind Energy Training</td>
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<td>● Energy Webinars</td>
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<td>● Energy Certifications of Tribal Personnel</td>
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Projects Status

**Energy Audits**

- Activities Completed:
  - 38 Tribal Governmental Building Energy Audits
  - 2 Blower Door Systems and 4 Infrared Cameras Purchased
- Outstanding Items:
  - Building Energy Audit
  - Housing Energy Audits

**Technologies Training**

- Classes Completed:
  - Building Analyst
  - Building Envelope Professional
  - Advanced Energy Audit Technologies
- Outstanding Items:
  - Certifications
  - Additional Field Experience
Accomplishments

**Energy Audits**
- Energy Priorities Identified
- Energy Awareness Raised
- Energy Saving Retrofits Installed
- Energy Saving Procedures Implemented

**Technologies Training**
- Certifications
- Equipment Operational Knowledge
- Energy Audits Implemented
- Tribal Energy Strategy
- Confidence in Tribal Personnel Capabilities
Lessons Learned

**Energy Audits**
- Energy Concerns with Tribal Facilities Confirmed
- Rebate Application Process Established
- Need for Engineering Specifications Identified

**Technologies Training**
- Coursework More Difficult Than Expected
- Training Requires Mathematics and Science Knowledge
- Time Commitment Is Barrier – Workload & Reduced Personnel
Activities to Complete

**Energy Audits**
- 1 Commercial Energy Audit
- 25 Residential Energy Audits
- Attend DOE Annual Program Reviews
- Grant Reporting

**Technologies Training**
- Certifications
- Additional Field Experience
- Attend DOE Annual Program Review
- Grant Reporting
Photo – Tribal Housing Site

Potential Site of 25 Residential Energy Audits

Kincheloe, MI

Aerial Photo by Kathleen Brosemer, Sault Tribe Environmental Program Manager
# Future Plans

<table>
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<tr>
<th>Energy Audits</th>
<th>Technologies Training</th>
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<tr>
<td>- Find Funds for Engineering Specifications</td>
<td>- Find Funds for Training to Certify Tribal Personnel as Trainers</td>
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<tr>
<td>- Implement Energy Improvements in Tribe’s Commercial Buildings</td>
<td>- Find Funds for Energy Department, Energy Manager &amp; Energy Capacity Assessment Tribal-wide</td>
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<tr>
<td>- Continue Applying for Energy Rebates</td>
<td>- Provide Basic Technologies Training &amp; Certification to Additional Personnel</td>
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<tr>
<td>- Research Funding for Initial Renewable Energy Options</td>
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Acknowledgements

Sault Tribe is implementing energy retrofitting to protect natural resources, improve Tribal membership economic well-being, foster self-sufficiency and sustain operational continuity.

_Sault Tribe expresses appreciation to the U. S. Department of Energy for providing the funding, which makes these projects possible._

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