

NATIONAL WILDLIFE FEDERATION 2010

- On average, Tribal households pay significantly more in home energy expenses than other Americans. Most utilities are solely owned and operated by non-Tribal entities, *so the money paid to energy providers immediately leaves tribal communities.*

THE NEW ENERGY FUTURE IN INDIAN COUNTRY

- The infrastructure and revenue streams created by tribal renewable energy and energy efficiency projects could help tribes achieve economic growth and energy independence, and strengthen tribal sovereignty. *These projects would help keep utility revenue within tribal communities* and create worker training opportunities in clean energy jobs, such as installation, maintenance, weatherization, and construction. While such projects must carefully consider the potential impacts on the land, wildlife and habitat, they could help tribes meet their energy demands and sustain their natural resources for future generations.



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Weatherization

- The *simplest and most cost-effective way of reducing energy costs* and emissions is *by increasing the energy efficiency* of buildings. Weatherization includes strengthening insulation barriers, sealing gaps, replacing inefficient materials, and installing energy-efficient heating and cooling systems. *These should be the first stages of any energy efficiency plan.*



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TRIBAL OPPORTUNITY

Because Indian tribes endure the highest energy costs in the nation, great strides can be made in economic savings by weatherizing tribal homes and buildings. While no method currently exists to project total economic savings via weatherization on all Indian reservations, a few examples illustrate the significant potential to lower energy costs and conserve energy. *Depending on the condition of the building, weatherization can save 15 to 40 percent in energy consumption and costs.*



Safe and Healthy Homes

- Weatherization is not just about energy efficiency.
- Most people spend 90% of their time in their homes.
- The number of children with asthma has doubled in the last 10 years.
- 1 in 40 Children has too much lead in their body's
- Thousands of Children die each year from chemicals stored or improperly stored in their home.
- Each year accidents in the home injure over 6.5 million people a year.

U.S. Department of Housing and Urban Development.



Training for Weatherization: What it Really Takes

Building Science Academy



Retro Fit Loading Order

Fundamentals

- *Insulation*
- *Air Sealing*
- *Duct Sealing*
- *Lighting*
- *Appliances*
- *Water Conservation*
- *Plug Loads*
- *Behavior*

Major Systems

- *Heating*
- *Air Conditioning*
- *Ventilation*
- *Water Heating*

Renewables

- *Solar PV*
- *Solar Thermal*
- *Wind*
- *Water Catchment*





Successful Energy reduction Programs are Driven by well trained Tribal Members!

- The foundation of every successful program is the people delivering the services. (Energy Wise)
- Well trained individuals with the right resources, tools and training can deliver consistent energy savings to the Tribal communities.
- Beyond rebates and incentives well trained people can drive long term sustainable programs if they are provided quality training and mentoring programs.



Successful Training Programs Must be taught by Experienced Trainers.

Trainers Experience must include the following:

- Energy Assessments
- Blower Door testing experience
- Infrared Thermal Imaging
- Combustion Safety testing
- Gas leakage testing
- Contractor Installation of Energy Efficient Measures
- Heating and Cooling Systems
- Sales and Marketing
- Building Code Knowledge
- Construction Business Management

Training is only as good as the trainer and the curriculum!



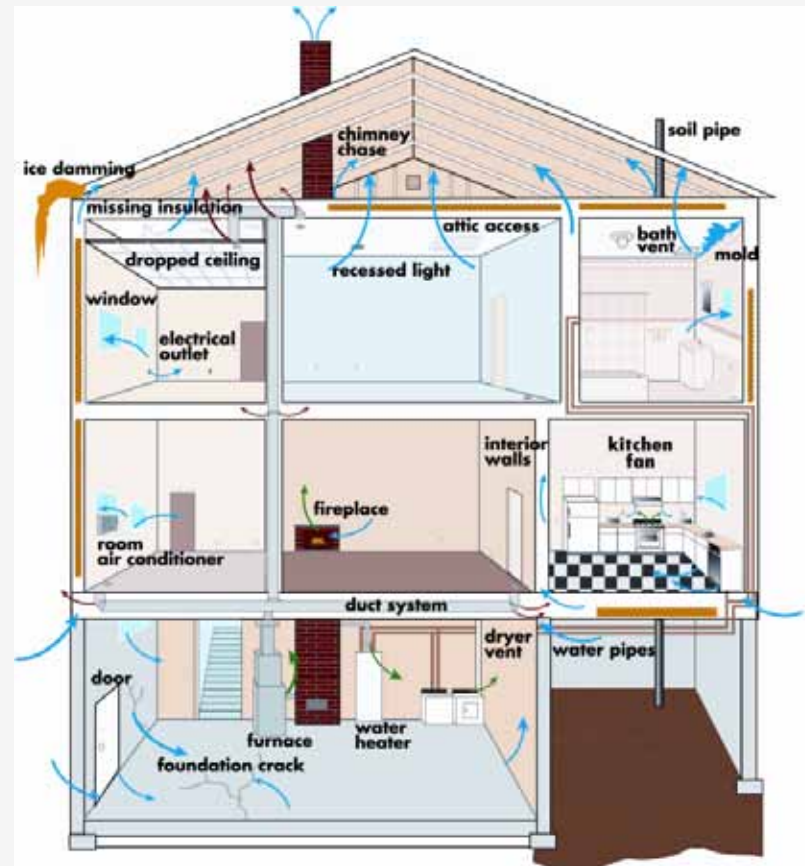
Nationally recognized Certifications Must be the first Step!

1. Building Performance Institute (BPI) certifications are required in over 130 energy efficient programs in 35 states.
2. Everything starts with a good Energy Assessment
BPI Building Analyst certification
3. Effectively Communicating the results of the Energy Assessment.
4. House as a System training is not optional!
5. Certifications alone are not sufficient to prepare a worker to be effective and successful.



Typical home...full of systems...

- Drainage system
- Foundation system
- Flooring system
- Wall system
- Ceiling system
- Roof system
- Heating system
- Air conditioning system
- Ventilation & IAQ systems
- Moisture control systems
- Distribution system
- Exhaust systems
- Plumbing systems in/out
- Electric, Appliance
& Lighting systems
- Energy management system



Hands on Training a Must!



**Keweenaw Bay Indian Community Training
Baraga, Michigan**



Develop Weatherization Crew

- Based on skills sets of staff trained define other trade staff needed like HVAC, mold or asbestos abatement, etc. to offer comprehensive weatherization services
- Mentor and work with students on fixing at least 3 homes.
- Students with Lead Field Supervisor (based on application, interview and test scores) will fix at least 5-10 additional homes on their own. BSA/BSES will be available for consultation and questions.
- Students will be required when completing homes to write basic field guide on how to retrofit homes.
- Upon completion of 5-10 homes BSES will return and evaluate and provide report to elders. Students will also accompany BSES on quality assurance audits. BSES will provide Quality Manual and Procedures for Program if needed.
- ***Note: Students should be required to have lead, asbestos and mold remediation courses**
- **~ 5days plus field work.**



- BPI Building Analyst Certification
- BPI Envelope Professional Certification
- BPI Weatherization Installer Certification
- BPI Multi Family Certification
- BPI Certified HVAC Certification
- Advanced Equipment Training
- Hands on Field Training
- Mentoring Programs





Weatherization Installer Training

BPI & DOE Approved





Ceiling attic Prop





Pre-Insulation stack barrier



Duct Sealing Props



Attic Knee wall Prop



Attic Ventilation Prop



Dense Pack Wall Insulation Prop



Tools provided for training



Energy Efficient Chandelier



Low Flow Shower Head



How safe is this???



seeifixedit.com

Multi Family Project



The Training Difference

- Do training at your location.
- All building stock is not created equal. Train on your buildings in your climate zone.
- Hands on training is the most effective.
- Auditing and writing effective work scopes is key to retention.
- Teach the energy auditors about the importance of QA.
- Continuous support to trainees for a period of time.
- Sales training on delivering home owner education.



Quality Assurance

- Most programs need a QA program in place to ensure effective programs
- QA is not to be a negative process
- Most contractors welcome a good QA program
- Protect your investment with QA



Why is it important?

- Poor housing conditions are among many hardships confronting residents of American Indian reservations. According to a recent study by the U.S. Department of Housing and Urban Development (HUD), housing problems of American Indians are considerably more severe than those of non-Indians in all parts of America.





Q & A

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