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Agricultural Outlook Forum
U.S. Department of Agriculture

Presented: February 23-24, 2012

Energy Independence Through Building Conservation & Energy Efficiency

Michael Vogel

translating research

Transformational Education

All 50 states
District of Columbia
U.S. territories

Local Access

part of Land-grant
University System

civic engagement

TRUSTED
RESOURCE

Rural

URBAN

national network

FOOD
SAFETY

water conservation

—COOPERATIVE—
EXTENSION

ONLINE

train the
trainer

seminars

Leadership
Development

agriculture

ENERGY

ENVIRONMENT

ranching

ask-an-expert

HEALTHY
PEOPLE

HORTICULTURE

FORESTRY

learning tools

Disaster preparedness

4-H youth development

Small Business

webinars

farming

nutrition

FAMILY WELL-BEING

community economic vitality

—COOPERATIVE— EXTENSION

Part 3

Energy Independence Through Building Conservation & Energy Efficiency

Michael Vogel

Montana State University Extension

Housing & Environmental Health Specialist



Extension Mission:
Provide “core-4” life-long,
issue-based
education to all
consumers.



We all live and work in buildings that consume energy.



Ag Operations



Individuals
& Families

**Energy
Consumption**

Main-Street
Businesses



Local
Government



**In US, buildings use almost 40%
of all energy consumed and two thirds
of all electricity. DOE 2011**



Homes – 54%



Commercial 46%



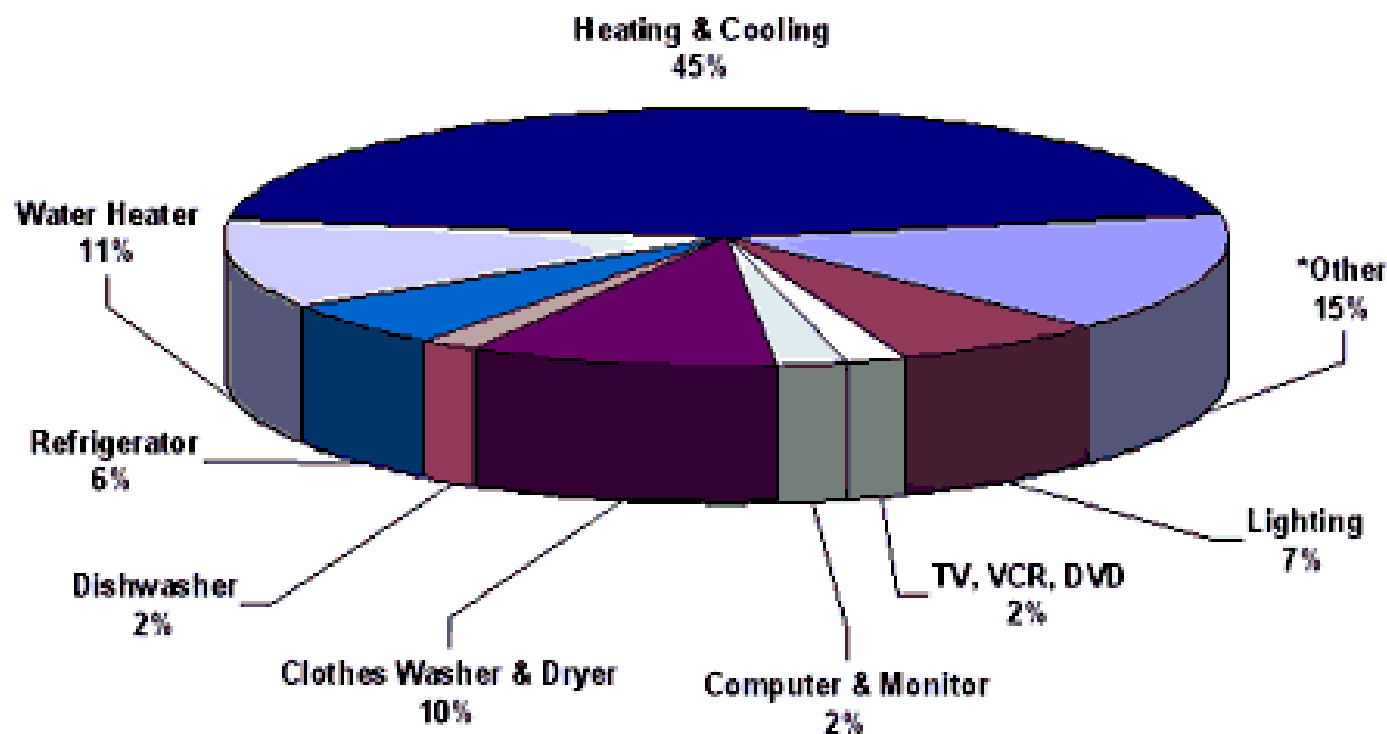
Federal – 2.2%



**Buildings and construction of buildings generate
almost 50% of the Greenhouse Gases in the US. Edward Mazria**



Start at Home— 54% of Building Energy Consumption



—COOPERATIVE— EXTENSION

**Cooperative Extension's Role in Reducing
Building Energy Consumption & Climate Change**

Research:

Camelina Engineered Composite Pellet Fuels



Impacts:

- Local Clean AG-Fuel Produced
- Local Jobs Created
- Schools and Municipal Buildings Heated
- Less Dependence on Fuel Oil

Research



Solar Performance Monitoring Initiative



Impacts:

- Local Jobs Created
- Greater Knowledge and Confidence in Solar
- Less Dependence on CO Producing Fuels



Creating Local, Regional and National Partnerships

- States & Agencies Working Together -



Impacts:

- Less Duplication of Efforts
- Extended Use of Funds
- Sharing of Resources and Information

Offering Training, Certification & Education to Consumers



Impacts:

- Trained Workforce – 1,000s/yr
- Local Jobs Created
- Buildings Audited & Verified as Energy Efficient and Healthy



Exploring Energy Efficiency & Alternatives

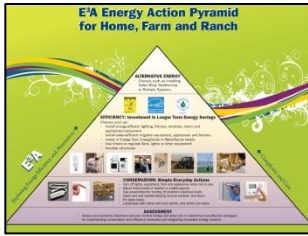


Contractor and Consumer Education Program

Education & Decision-making Toolkit

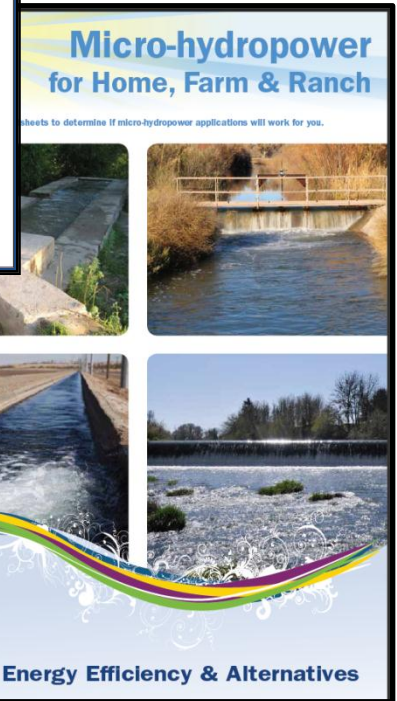
PRINCIPLES • TECHNOLOGY • APPLICATIONS

WWW.E3A4U.INFO



E3A Toolkit Contents

- User Guide and Programming Materials
 - Map and General Energy Info.
 - Programming Resources
 - Online Resources (PPT, Links, etc.)
- Six Technology Folders
 - Micro-hydro
 - Small wind
 - Solar Electric (PV)
 - Solar Hot Water
 - Biodiesel
 - Anaerobic Digesters
- Two Energy Efficiency Folders
 - Home Energy
 - Farm Energy



Funded by:



Impact:
**Creating a
Local Trained
Workforce**



On-Site Training — Alaska Natives. Navajo Nation. Pacific Islands.

Impact: Creating a Rapid Response Trained Workforce



**On-Site/In-Home
Mobile Training Center**

Offering On-line Education & Training



Impacts:

- Reaches 65,000 new users monthly
- Instant Training & Info Access
- Increased worker productivity
 - more time on the job
 - reinforcement of info
 - CEU credit





HOME ENERGY

Best Practices

FAQs

Ask an Expert

Articles

Money-Saving Tips

Visit www.eXtension.org
Click Resource Area **Energy**
Select **Home Energy**

Home Energy-Saving guidance
from Land-Grant University
Experts



Home Profiles

Home Introduction

Search for homes

Submit a home profile

Contact us

www.homesacrossamerica.org

A Construction Technology Showcase



Resource Efficient
HOMES ACROSS AMERICA

comfort • health • performance • durability



POLLUTION PREVENTION
INFORMATION CENTER





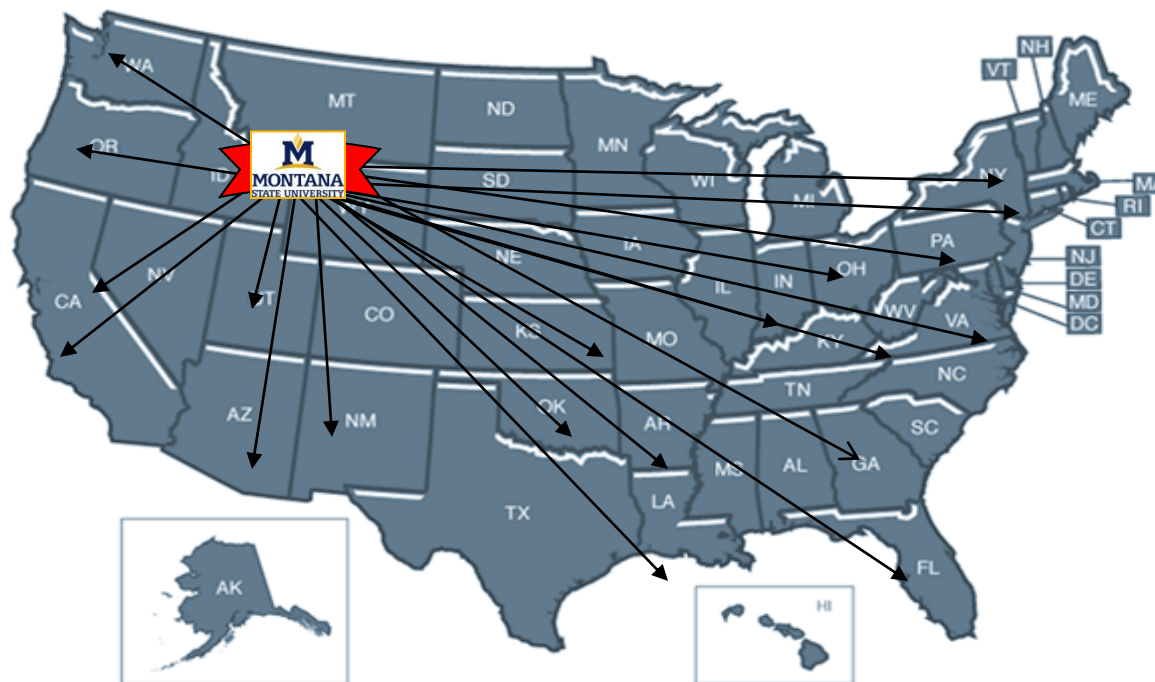
Certificate of Applied Science in Residential Building Performance

- Professional Career Pathway
- Converts Existing Training to Degree
- Builds on Certificates and Certifications

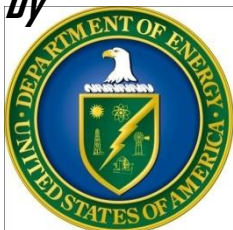
Certificate of Applied Science in Residential Building Performance

One Year Degree Program with Nationwide Access

IREC Accredited Training Centers may offer the Degree



Funded by



Business and Agricultural Recognition



Partnership
Recognition from
5 Governors
since 1995

Impacts:

- Community Leadership
- Motivating Adoption
- Showcasing Success
- Influencing Funding



—COOPERATIVE— EXTENSION

Outcomes:

- National Workforce Expanded and Trained – thousands per year
- Homes and Buildings Retrofitted
 - 35-65 % energy savings
 - \$235.00-\$640.00 household saving/year
- \$1.00 invested in energy retrofit returns \$4.35 in community benefits – materials purchased, manufactured goods, lodging, etc.
- Consumers educated & adopting energy saving practices
 - Increased spending
 - Increased comfort
 - Increased health and safety
- Carbon dioxide & other air pollutants reduced

Contact Information

To find Cooperative Extension:

In your community: www.nifa.usda.gov/extension

Online: www.extension.org

www.facebook.com/cooperativeextension

www.twitter.com/cesvalue

For questions about potential partnerships:

Jane Schuchardt, Executive Director

jane.schuchardt@extension.org, 202-478-6029