

MINNESOTA
>ENVIRONMENTAL<
INITIATIVE



1.5% Energy Efficiency
Solutions Project

Jack Hogin
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Outline



- **MEI Background**
- **Project Background and Charge**
- **Review Project Recommendations**
- **Next Steps**
- **Questions and Contact Info**

MEI Background



- **19 year-old nonprofit**
- **Mission: Build partnerships to develop collaborative solutions to Minnesota's environmental problems**
- **Seek to build cross-sector partnerships through three areas of work:**
 - **Events**
 - **Dialogues with Stakeholders**
 - **Implementation**

Project Background



- **Next Generation Energy Act of 2007:**
Established a statewide conservation goal of 1.5% of annual retail electric and natural gas sales
- **Since the passage of NGEA a number of issues emerged that may represent barriers to achieving the goal**
- **Jan 2010: Office of Energy Security (OES) awarded a grant to MEI to design, lead and facilitate the project**

Charge to the Project



1. Develop a list of policy barriers to achieving the 1.5% annual energy efficiency savings goal
2. Identify up to four priority barriers and recommend solutions to those priority barriers
3. Develop a list of recommendations for longer-term efforts to develop and implement

Approach to Meet the Charge



- **Work Group:**
Primary group charged with developing recommendations
- **4 Technical Working Groups (TWGs):**
Developed recommendation proposals for the priority barriers for the Work Group
- **Additional Input:**
 - Visitor comments during Work Group meetings
 - Online Public Comment Period

Work Group Roster

(Primary Participants)



Gary Connett, Great River Energy

Jill Curran, Minnesota Waste Wise

Chris Duffrin, Neighborhood Energy Connection

Bill Grant and Jenny Myers, Izaak Walton League

Joe Hallberg, Hallberg Engineering

Bob Jagusch, Minnesota Municipal Utilities Association

Tina Koecher and Tim Gallagher, Minnesota Power

Pam Marshall and Suzanne Walsh, Energy CENTS Coalition

Karen Moe, Minnesota Community Action Partnership

Kim Pederson, Otter Tail Power

Lola Schoenrich, Great Plains Institute

Margaret Schreiner, Dakota County

Janet Streff and Jeff Haase, OES

Sheldon Strom and Carl Nelson, Center for Energy and Environment

Deb Sundin, Xcel Energy

Linda Taylor and Kate Ellis, Fresh Energy

Mike Taylor, Honeywell

Alecia Ward, The Weidt Group

Recommendations & Outcomes



1. A list of 10 barriers to achieving the 1.5% energy efficiency savings goal
2. 18 strategies to address issues within four priority barriers
3. A list of nine long-term and research and development recommendations for the four priority barriers

List of Barriers to Achieving 1.5% Goal



- **Priority Barriers:**
 - Utility Infrastructure Improvement Issues
 - Low-Income Conservation Program Issues
 - Behavioral Programs Issues
 - Codes and Standards Issues

List of Barriers to Achieving 1.5% Goal



- **Other Barriers Identified:**
 - Increasing Energy Efficiency Achievements Issues
 - Financing
 - Rural Issues
 - Rental Issues
 - Public Awareness and Behavior
 - Utility Incentives



Utility Infrastructure Improvements

As a result of the Next Generation Energy Act, utilities are allowed to make investments that improve the efficiency of the supply side system or generate electricity from waste heat and claim savings from these investments above the minimum requirement of 1% energy savings.

- 1. Develop the guidelines and criteria to determine what infrastructure improvements are eligible to be counted toward the energy efficiency savings goal in excess of 1.0%.**
- 2. Identify how utility infrastructure improvements may get covered financially and in rate recovery.**
- 3. Develop a methodology to determine energy efficiency value derived from utility infrastructure improvements.**
- 4. Identify how to treat carry forward provisions added in 2009 to the Next Generation Energy Act.**

Utility Infrastructure Improvements TWG



Carolyn Brouillard and Amy Liberkowski, Xcel Energy

Mark Brown, Franklin Energy Services, LLC

Bill Grant, The Izaak Walton League of America

Tim Gallagher, Minnesota Power

Mike Gregerson, Great Plains Institute

Bob Jagusch, Minnesota Municipal Utilities Association

Carl Nelson, Center for Energy & Environment

Subodh Patel and Jeff Haase, Office of Energy Security

Kim Pederson and Dan Nelson, Otter Tail Power

Jared Newton, United Services Group/Great River Energy

Matt Schuerger, Energy Systems Consulting Services

Craig Turner, Dakota Electric

Utility Infrastructure Recommendations



- **EUI 1 – Electric Utility Infrastructure (EUI) Project Eligibility**
 - Distribution and Transmission Project Eligibility Illustrative Case Examples
 - Generation Project Eligibility Illustrative Case Examples
- **EUI 2 – Cost Recovery Options for Electric Utility Infrastructure Projects**
- **EUI 3 – Methodology to Determine Energy Savings from Utility Infrastructure Projects**
- **EUI 4 – Treatment of Carry Forward Provisions**
- **EUI Strategies Addendum – OES Perspective on EUI Accounting**



Low-Income Conservation Programs

All Minnesota utilities have a requirement to spend a minimum of 0.2% of their residential gross operating revenues on programs that are designed to serve the needs of low-income households.

- 1. Identify how to maximize the benefits and cost effectiveness of the low-income CIP spending requirements and programs, including non-energy impacts.**
- 2. Develop methodologies to account for delivered fuels and small gas weatherization savings through electric utility conservation programs incremental to DOE funding.**
- 3. Develop strategies to increase conservation investment in rental housing.**
- 4. Develop methodologies to identify energy savings from non-utility funded weatherization programs.**

Low-Income Conservation Programs TWG



Jack Bethke, Community Action Program

Jeanette Blankenship, Minnesota Housing

Marcia Campbell, Minnesota Power

Bob Jagusch, MN Municipal Utilities Association

Pam Marshall and Suzanne Walsh, Energy CENTs Coalition

Bridget McLaughlin, Xcel Energy

Tony Spears, Community Action Program

Tom Sagstetter, Great River Energy

Brenda Sandahl, Otter Tail Power

Laura Silver and Jeff Haase, Office of Energy Security

Sheldon Strom, Center for Energy & Environment

Low-Income Program Recommendations



- **LI 1 - Strategies to Increase the Effectiveness of Low-income CIP**
- **LI 2 - Listing of Non Energy Benefits Associated with Energy Efficiency/Conservation Projects Delivered to Low-Income Customers**
- **LI 3 - Developing Tiered Energy Audits**
- **LI 4 - Standard Services Agreement Template**
- **LI 5 - Accounting for Delivered Fuels and Small Gas Weatherization Savings**



Behavioral Programs

Energy conservation programs designed to create savings through customer behavioral changes are increasingly being tested and used throughout Minnesota.

- 1. Develop a list of the currently available behavioral programs.**
- 2. Develop a methodology to measure savings from behavioral programs, including the determination of appropriate lifetimes as well as a methodology to avoid double counting energy savings when leveraging these programs.**
- 3. Develop a methodology for the inclusion of non-utility behavioral programs into the state energy efficiency accounting.**

Behavioral Programs TWG



Jill Curran, Minnesota Waste Wise

Theresa Drexler, Otter Tail Power

Chris Duffrin, Neighborhood Energy Connection

Joe Hallberg, Hallberg Engineering

Tina Koecher and Tim Gallagher, Minnesota Power

Tom McDougall, The Weidt Group

Diana McKeown, Eureka Recycling, Metro CERT

Jenny Myers, Izaak Walton League

Carl Nelson, Center for Energy & Environment

Joe Plummer, Office of Energy Security

Bruce Sayler, Connexus Energy

Margaret Schreiner, Dakota County

George Spargo, Xcel Energy

Joe Steffel, City of Buffalo

Behavioral Program Recommendations



- **BEH 1 – List of Currently Available Behavioral Programs**
- **BEH 2 – Guidelines for Counting Savings from Behavioral Change CIP Programs**
- **BEH 3 – Methodology for Inclusion of Non-Utility Funded Behavioral Programs into State Energy Efficiency Accounting**



Codes and Standards

As energy codes and standards change a number of issues arise that can have a negative impact on utility conservation programs, and present enforcement and implementation challenges. However, there is significant energy savings potential associated with the implementation of codes and standards, and NGEA provides an opportunity for utilities to play a role in the implementation of energy codes and standards in Minnesota.

- 1. Identify how quickly the baseline conditions for the energy savings that the utilities can count should change when a new building code or standard or appliance and manufacturing equipment standard is adopted, and develop methodologies for counting this change.**
- 2. Develop a methodology for the state to track the energy savings from the implementation of existing and new building codes and standards.**
- 3. Identify the business as usual scenario for codes implementation, develop strategies to address how utility programs can assist in breaking down the implementation barriers to codes and standards, and develop a methodology for utilities to track the energy savings from increased implementation of new and existing codes and standards.**

Codes and Standards TWG



Chris Baker, The Weidt Group

Bruce Boerner, Xcel Energy

Chris Cloutier, D&R International

Isaac Elnecave, Midwest Energy Efficiency Alliance

Jon Fabre, Otter Tail Power

Michael Hoy, Dakota Electric Association

Stephen Hernick, Minnesota Department of Labor and Industry

Craig Kedrowski, Minnesota Power

Russ Landry, Center for Energy & Environment

George Myers, Brookfield Properties

Jeremy Peterson, Xcel Energy

Janet Streff, Office of Energy Security

Codes and Standards Recommendations



- **CS 1 – State of Minnesota Baseline**
- **CS 2 – Individual Utility CIP Program Baseline**
- **CS 3 – Calculating Foregone Energy Savings Due to Code Non-Compliance**
- **CS 5 – Early-Retirement Demand-Side Management (DSM) Measures to Increase Implementation of Codes and Standards**
- **CS 6 – Minnesota Utility Code Group Proposal**
- **CS 8 – Aggressive State Energy Performance Equipment Standards**

Long-term and R&D Recommendations



Utility Infrastructure

1. Investigate possibility of separate mechanism for EUI cost recovery through existing options beyond a rider.
2. Perform EUI equipment tests to evaluate savings from various options.

Low-Income Programs

3. Quantify monetary savings from non-energy benefits of programs that may be considered as part of cost-benefit analysis.
4. Evaluate persistence of energy savings resulting from low-income programs.
5. Evaluate impact of delivered fuel heating programs.

Long-term and R&D Recommendations



Behavioral Programs

6. OES develop a work group to:

- Conduct a study determine the persistence of energy savings and appropriate measured lifetimes of longer-term behavioral programs.
- Identify effective behavioral-based conservation program ideas to share with utilities and other providers.
- Evaluate the impacts of a combined asset-based and behavioral-based conservation program.
- Identify the potential energy savings resulting from changes in rate design.
- Identify the potential social norming impacts from behavioral-based conservation programs.
- Identify the potential energy savings impacts from implementing smart grid technology

Long-term and R&D Recommendations



Codes and Standards

7. Develop rules for baseline HVAC system type definition in buildings covered by the Residential Energy Code through a market study.
8. Develop specific amendments to the application of ASHRAE Standard 90.1-2007 as needed to take into account actual market conditions in MN through a market study.
9. Calculate and determine measurement of the energy savings lost due to code non-compliance.

Next Steps



- **Final project report out and posted to MEI website**
- **Outreach activities**
 - MEI, OES & Work Group
 - Feb – Apr 2011
- **OES review recommendations and decide on actionable items, where possible**

Questions & More Info



Project Webpage: <http://www.mn-ei.org/projects/EE1.5.html>

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