CIP/Energy Efficiency Program Design & Implementation

Pre-Conference Session

2010 Duluth Energy Design Conference

February 22, 2010 – Duluth, Minnesota

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1. Good Morning - *Objectives*

Objectives for This Morning

- Open discussion, very interactive…discuss:
- The business case for promoting more energy efficient end-use customers
- Exchange ideas … how Minnesota electric and gas utilities working to achieve 1.5% energy saving goals
- Challenges shifting from spending to results goal
- Ideas/models that might help your organization
- Provide resources for more information

8:30 – 10:30 am….quick break around 9:20 am

Proposed Agenda

1. Objectives
2. Tell us what topics you want to discuss!
3. Why - spending money to manage your kWh / therm sales…
4. Challenges - why does it seem painful to some utilities to get energy efficiency programs off the ground?
5. Ideas to Consider - to get your effort going, particularly for municipals and cooperative utilities

All this from now till 9:20 am – 10 minute break then

Proposed Agenda

5. Real World Case Study – North Western Minnesota experience: 17 cooperative and municipal utilities
   Lisa Pickard, Minnkota Power Cooperative
   9:30 – 10:00 am

6. Open Discussion. I will prompt the group with prepared questions to get this going
   10:00 – 10:30 am

Who is here? – Quick introductions

My Request of You

- I have never been to a session where I have not learned something from others
- Hopefully I will convey something of use to you
- Please talk up (or write) questions / issues you want to discuss
- We have two hours let's make the best use of that time

2. What do you want to cover?

Come On, Let's Here It

- "Why does it make sense spending an hour to process a $2 CFL incentive?"
- Goal is overwhelming…Where and how to start?
- I just don't believe saving 1.5% is realistic
- Tracking system…why?
- What else….?

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3. The Case for Helping Your Customers Save Energy

The logic behind energy efficiency

- Why do we spend time and money on this?
- When well done, competitive energy efficiency programs are a least cost “resource”
- Portfolios must be cost - effective
  - The “B/C” is commonly judged by small number of fairly standard benefit-cost tests
  - Key for Minnesota: Societal / Total Resource Cost Test

Total Resource Cost Test

- Benefits – value of the savings (avoided costs, any environmental externalities) over life of measures
- Costs – full cost of the program, incentives, etc. PLUS the full cost to the customer for the e.e. measures
- >=1.0 is cost effective, produces more benefit than the cost invested to produce the savings from a total resource, or societal standpoint

Perspective on B/Cs

- Minnkota/NMPA Example….
- Important to view on measure, program, and overall portfolio level
- Some measures, standalone, may not be cost effective, but still make sense to promote as long as the overall program OR portfolio is cost effective
- Provides the utility with flexibility to run programs that have other strategic value

Bigger Picture Indicators of Cost-Effectiveness

- Think of in terms of the energy efficiency program competing for its position with other resources
- Supplying the next kWh…build, buy, or help defer?
  - How much does it cost to purchase a kWh?
- New Capacity Cost - Wind? Coal? Natural Gas?

Levelized Cost Estimates

- Pulverized Coal: $.07 - $.14/kWh
- Combined Cycle Gas: $.07 - $.10/kWh
- Wind: $.04 - $.09/kWh

- Source: Saving Energy Cost Effectively: A National Review of the Cost of Energy Saved Through Utility-Sector Energy Efficiency Programs, ACEEE, September 2009
- Page 22 - Levelized Cost Estimate for 2020 from EIA

Energy Efficiency's Track Record

Electricity – Cost of Saved Energy in 14 leading states:

- Range of costs: $.016 to $.033/kWh saved
- Average: $.025/kWh saved
- 1/3 the cost, or less, compared to any new supply
- Appears to be slightly more competitive now vs. similar study completed in 2004 ($.03/kWh saved)
- *Source: Saving Energy Cost-Effectively: A National Review of The Cost of Energy Savings Through Utility-Sector Energy Efficiency Programs, ACEEE, September 2009*

Energy Efficiency's Track Record

Natural Gas - 6 leading programs:

- Range of costs: $.27 to $.55 / therm saved
- Average: $.37 / therm saved

- *Source: Saving Energy Cost-Effectively: A National Review of The Cost of Energy Savings Through Utility-Sector Energy Efficiency Programs, ACEEE, September 2009*

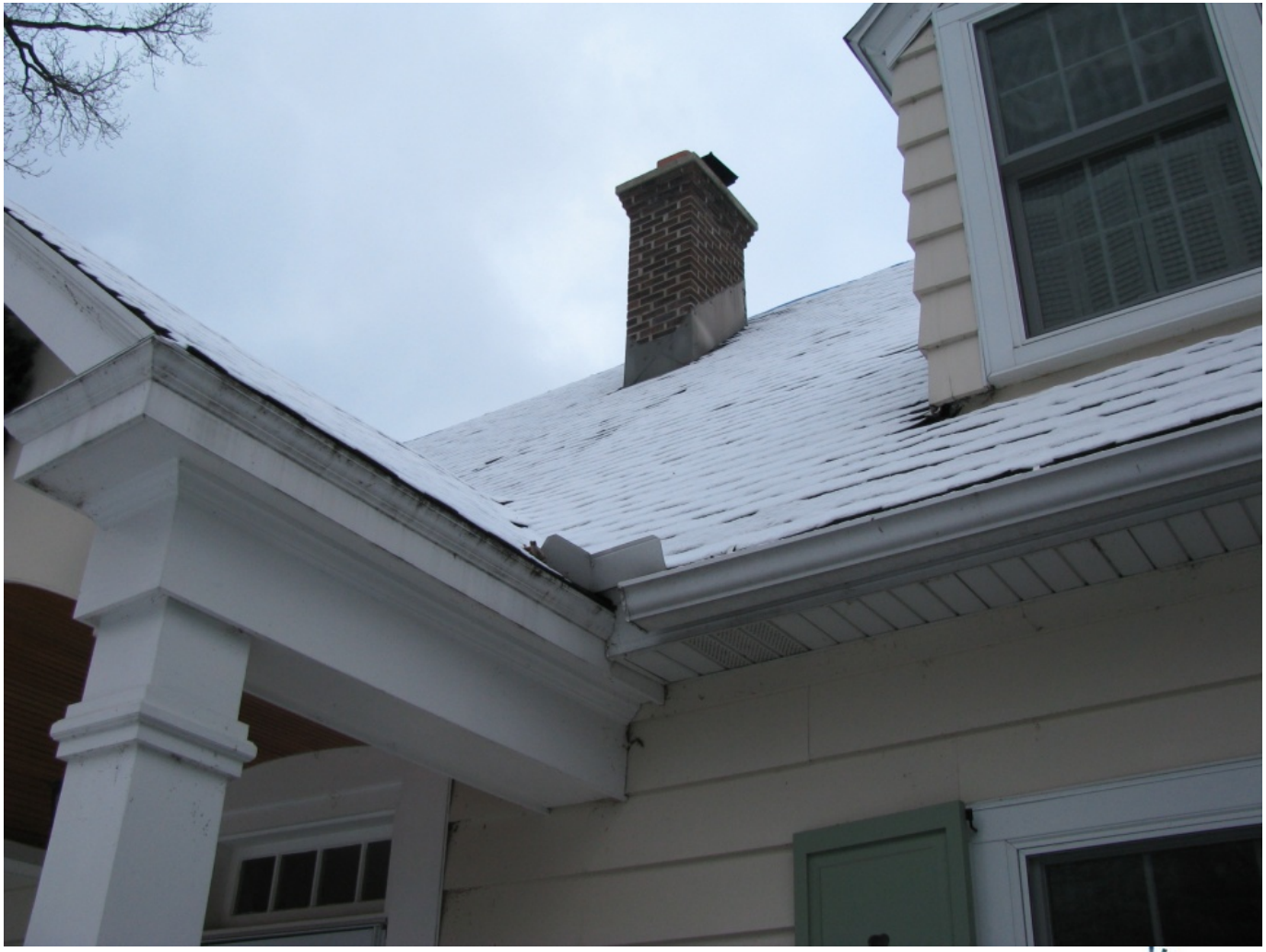
The logic behind energy efficiency

- A least cost option…if done well with an eye toward results
- Customer satisfaction!
- Fill holes in the market … technology / measure promotion that is unlikely to happen without your intervention
- A great excuse to continue building strong relations with business, trade allies that serve your market

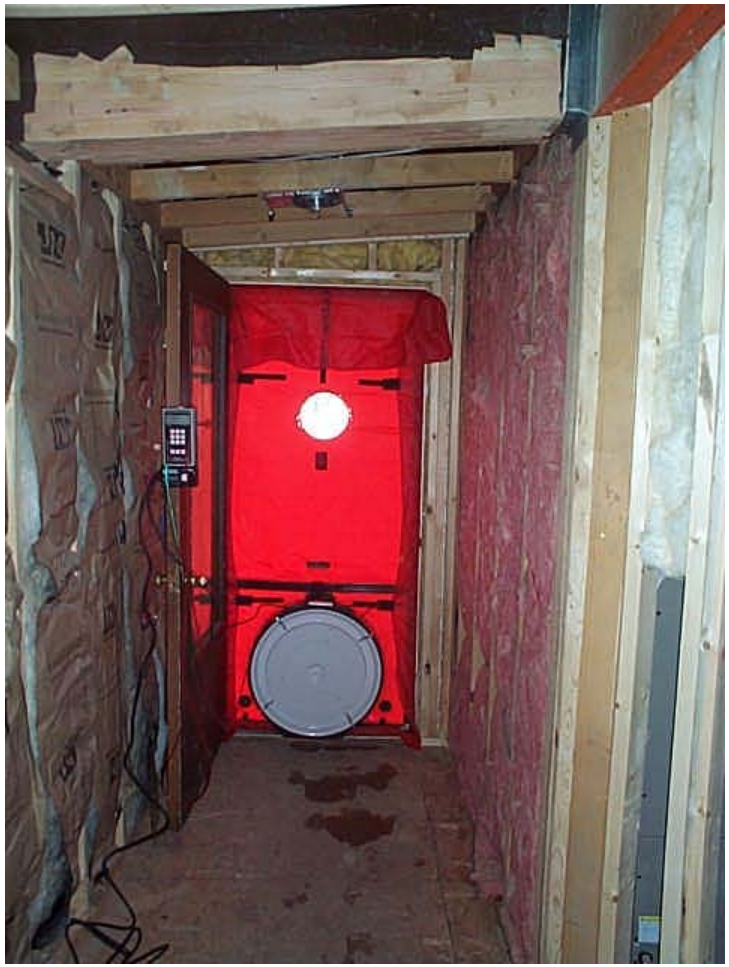
Example “Holes” in the Market

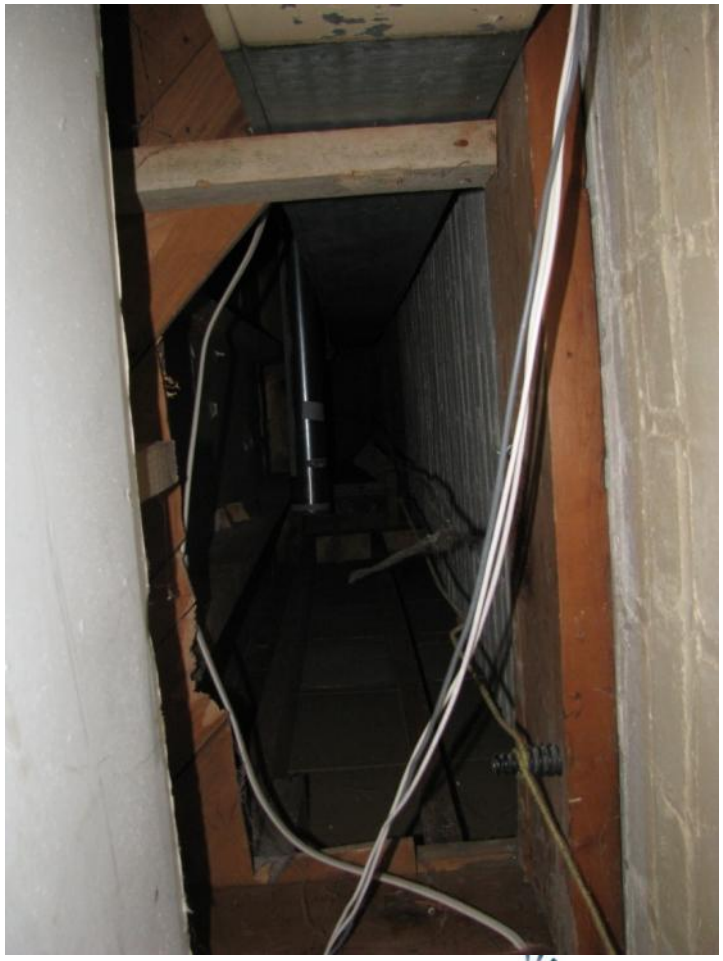
- Energy – Related Problems Common in Many Homes
- Specifications, installation of newer technologies (e.g. undersized geothermal systems)
- Market share of high efficiency equipment

Common Residential Challenges



Programs Increase Awareness, Infrastructure to Address Problems





Effective Programs Promote Best Practices, Materials

Market Share

- Big picture indicator of a program's effect
- Example: Wisconsin 2009 Furnace Efficiency Tracking (% of total unit sales)
  - <90% AFUE: 5%
  - >90% AFUE: 95%
  - Non Variable: 49.9%
  - Variable Speed: 45.1%
- *Source: Sept – Oct 2009 ECW WI Residential Furnace and Central Air Marketing Tracking*

What if your sales are declining?

- Still makes sense, help customers manage bills, guard against growth that may occur in future
- Targeted geographic areas where you could use load relief?
- It is tougher, and may require more involved policy (e.g. decoupling strategies)
- Aggregation – your purchasing group? Lean harder on utilities growing more rapidly and could use the e.e. resource
- Source for Ideas: *Breaking the Throughput Incentive: An Indiana Consumer Advocate Advocate's Perspective Indiana Office of Utility Consumer Counselor. Smith / Paronish, ACEEE September 2009 Presentation.*

Minnesota's 1.5% Savings Goal

- Aggressive? What is going on elsewhere?
  - 2008 U.S. annual electric savings = .34% of retail electric sales
  - Leading U.S. states achieved >1%
  - Annual electric savings projected to rise to .58% - .93% of sales by 2020
  - *Source: The Shifting Landscape of Ratepayer Funded Energy Efficiency Programs in the U.S., Barbose, Goldman, Schlegel, October 2009*

Examples of Goals in Other States

- New York – 1.4%/year during 2009 – 2015
- Wisconsin – leaning toward 2.0%/year
- Newer states to energy efficiency: in range of 1.0 – 2.0% during first 5 – 10 years of programs
- Example, ramp up in Illinois from .2% in 2008 moving to 2.0% by 2015

Does it work?

- Evidence from aggressive efforts over past 30 years?
- I saw a presentation recently that I would like to draw from the helps provide evidence, over a long period of time, that well done, cost competitive efficiency programs work well
- The Role of Efficiency in Meeting Pacific North West Energy Needs:
  - Tom Eckman, Northwest Power & Conservation Council, September 2009 Presentation
  - Slides 9 - 15

4. Challenges to Get Large Scale Energy Efficiency Programs Off the Ground

Challenges

- Organization attitude / perception of the effort
- Flexibility of regulators overseeing
- Near term rate pressure
- Pressure on staff … depending on your model
- Infrastructure: hardware, and people knowledge
- Consistency / building trust with your customers, allies

Organization attitude / perception

- Viewed only as a regulatory compliance issue, OR
- Genuine commitment to develop energy efficiency as a least cost resource, help customers manage bills
- Organization culture largely steers how successful programs are in short and long term
- Commitment of resources? Priorities?
- Large hurdle to overcome if management/Board not on side of the program ... Talk to management, answer hard questions, keep them informed

Flexibility of regulators

- Trust and flexibility provided? Recognition of going from not quite zero to 100?
- Approval to try some things, report back, refine your models over time
- Reality is with the types of goals that are being discussed throughout the U.S. and Canada, you need a good working relationship with the regulator
- Go into it KNOWING there will be problems, ways to refine and improve the program

Near term rate pressure

- Programs cost money put upward NEAR TERM rate pressure on the utility to pay for the program
- Must be an understanding of the long term track record for energy efficiency vs. other supply options
  - *Remember 2.5 cents per kWh saved…that is competitive*
  - *Remember the PNW case…$1.8 billion saved vs. alternative*
- Utilities with declining sales … innovative ways to keep these organizations whole while pursuing energy efficiency

Pressure on staff

- Successful programs need creative, hard working staff
  - A leader to keep everyone on the same page
  - Marketing / PR / Communications
  - Call Center
  - Field / Technical
  - IT / Administrative functions (e.g. fulfillment!)
- Models, Pros and Cons in a couple of minutes

Infrastructure

- Tracking systems
- Field equipment (blower doors, data logging)
- Inventory (direct install measures)
- Knowledge / training – building science, CEMs

Consistency

- Successful programs, that are competitive dollar wise, need active, happy trade allies pushing the offer
- Stop and Start Programs Are A Huge Barrier
- Shift from spending money (shut off the tap when dollar value met) vs. results means consistency
- Build trust with allies, common voice for region

5. Ideas and program models to consider to get programs off the ground

High Level Planning Approach

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Ideas / Models to Consider

- Don’t start from scratch…learn from neighbors, other utilities have been doing for 30 years
- Coordinating / aggregating where it makes sense, use of common resources (e.g. tracking, ally coordination, marketing, forms, etc.)
- If you aggregate, assemble a planning team
- Document what your organization wants 3 – 5 years from now … how can programs help get there?

Ideas / Models to Consider

- Bonneville Power Authority – targeted heavily loaded substations for energy efficiency programs
- Load management – use direct install visits as an excuse to check your load management controllers
- Be creative!
- Staffing – a) internal ramp up, b) completely subcontract program and result attainment, c) hybrid model

6. Case Study …

Minnkota / Northern Municipal Power Agency

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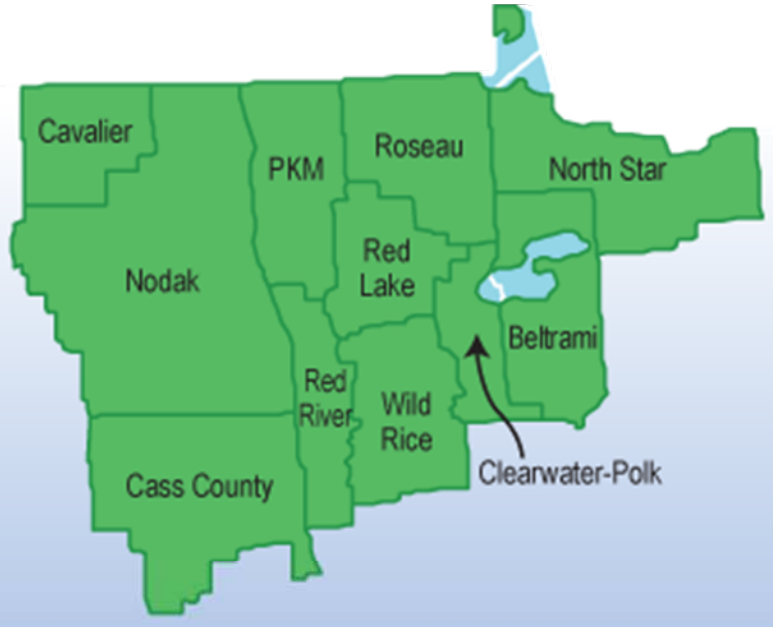
Our Objective Today

- Share practical information, and recommendations for designing and fielding common set of energy efficiency programs for cooperatives and municipal utilities

- Discuss some unique challenges to ramping up to more aggressive programs faced by small to mid sized utilities

- Share a model , be open to questions and discussion from other cooperative/municipal utilities and organizations as they plan for more aggressive energy efficiency programs

Overview of Region



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Efficiency Programs Pre 2008

- 26 individual programs across cooperative utilities alone
- Driven by spending vs. saving result requirement
- No universal message or consistent outreach to trade allies
- Informal coordination…each utility ran own effort

Minnesota's "1.5%" Goal

- For Minnkota/NMPA in MN, result is a goal 3.5 times greater than annual savings achieved up to 2008
- Resulting goal is 25 million kWh first year savings for 2010, 2011 and 2012
- High degree of skepticism across many utility staff members that this aggressive goal could ever feasibly be met by individual utilities
- Doing more of the same (individual programs) would result in costly programs in terms of $/kWh saved

Approach to Tackle this Goal

- Assemble a Design Team – representative from each utility
- In depth, bottoms up planning process over 9 months
- Agree the 1.5% goal is a collective goal across all member utilities for planning and implementation flexibility
- Results vs. Spending Orientation – establish savings and budget goals to work to up front

Approach to Tackle this Goal

- Develop, and agree on common set of objectives to use as measuring stick
- Be positive and outline what utilities WANT beyond just meeting regulatory goals
- Compromise – economies can only be achieved by reaching agreement…."You can't always get what you want…"

Common Top 5 Program Objectives

1. Consistent Programs - All Minnkota/NMPA Cooperative and Municipal member utilities working toward the same goal:
   - Simple programs
   - Clear goals
   - Something available to all customers
   - Ability to measure and verify activity and results

2. Solid, Effective Marketing
   - Consistency across members
   - Feedback on effectiveness

3. Build and Further Develop a Group of Business Allies to Support the Program
   - True allies for the member utilities to call on
   - Allies who are willing to accept training on installation practices and procedures

Common Top 5 Program Objectives

4. A Program to Affect Customers' Energy Use Behavior
   - New rate designs and offerings
   - TOU/Smart Meters
   - Solid advice to educate customers about what they can do to control energy use effectively

5. Energy Efficiency Education
   - For end use customers – what they should be looking for to substantially affect energy use now and in the future
   - Actual affect of programs
   - Realistic energy savings goal
   - Real dialogue with Legislators, MN Department of Commerce about where programs should go after 2012
   - *Track and present lifetime savings vs. only first year savings*

Unique Challenges

- Many members to try and get on the same page: 18 utilities in Minnesota, 3 in North Dakota without regulatory mandates
- Initially having 26 programs – recognizing, and letting go of expensive, less effective programs, fewer programs, possibly more measures less familiar to members
- Balanced focus on business and residential – need large business customer “hits” balanced with residential service offerings to achieve competitive $/kWh saved target

Unique Challenges

- Load Management – making sure energy efficiency promotions don't undermine effective load management programs
- Consistency across region to gain Trade Ally attention – critical to really have allies push offerings, "carry some water"
- Perceived near term rate impacts and significance of dollars
- Staffing – many member utilities already staff – strapped….how to staff or contract for services to meet needed demand

Planning to Meet Aggressive Goals

- Design Team worked from July 2008 to March 2009 to produce a cost effective joint plan to a) meet objectives the group agreed to up front, and b) meet CIP mandates 2010 - 2012

- Economics of immediate past, and future:
  - 2007 Minnkota/NMPA Program Spending: $.66/kWh first year saved
  - The Design Team's Joint Plan: $.14/kWh first year saved
  - Lifetime savings from Team's Joint Plan: 1.6 cents per kWh saved

- If executed, plan delivers a kWh at 1.6 cents per kWh

Result: Agreed Upon Portfolio

1. Business – Prescriptive Incentives
2. Business – Custom and Bidding
3. Business – Commissioning/Re Commissioning
4. Business - Small Commercial Direct Install / Limited Term Efforts
5. Residential – Prescriptive Incentives
6. Residential – New Construction
7. Residential – Existing Homes
8. Residential - Low Income
9. Residential – Direct Install/Limited Term Efforts
10. Residential – Energy Use Behavior Change
11. Supply Side Efficiency Projects

Important Information by Program

Key information to define each of the 10 end use customer programs

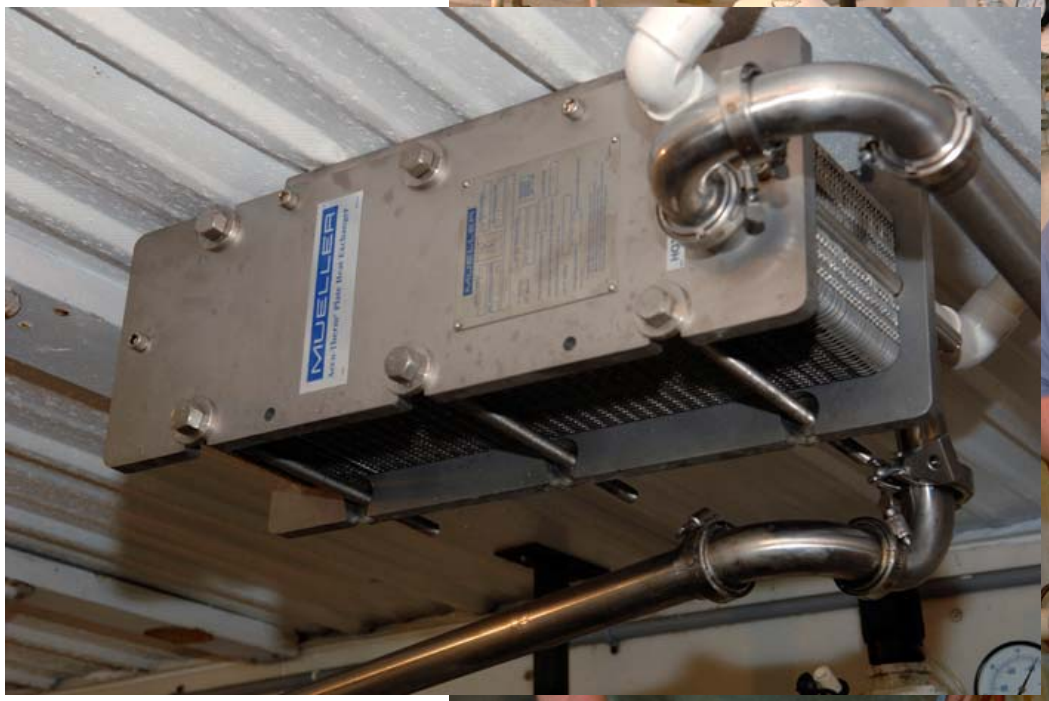
Example of a Summary for Business Customer Program

- Savings – 3,986,927 kWh/year (13% of projected portfolio)
- Number of projects – 30 – 40 projects/year
- Budget - $964,138/year
- $/kWh Saved - $.24
- FTE to support – 1.2
- Societal B/C - 2.1

Major Accomplishments to date

- Plan agreed upon, filed with regulators, started launch by priority in 2009
- Minnkota designated key staff member to oversee entire portfolio
- Great progress launching three critical programs including: 1. Business - Prescriptive, 2. Business - Custom, and 5. Residential - Prescriptive.
- The basic infrastructure is being established, members and allies are getting familiar with the programs, technologies, and processing incentives, etc. Very good participation from Trade Ally Roll Outs…2nd set in September
- Seeing some solid, initial success with projects that HELP CUSTOMERS:

Need to Show Tangible Value Quickly



Remaining Challenges

- Need to ramp up trade ally outreach activity to generate volume of projects needed to gain experience and meet planned kWh savings starting 2010.

- While the most important programs in terms of large kWh savings are in field now, remaining five (5) programs scheduled for launch need attention and support.

Remaining Challenges

- Staff to support these programs, ENSURE RESULTS, and volume of participating contractors, residential and business customers so we reach goals, support good customer service

- Combination of centralized support staffing from Minnkota to support member utility staff in field. Central staff for training and "surge" (if customer demand outstrips your ability to get the work done)

- Being sensitive to centralized vs. utility roles: For any centralized staff function, these people are behind the scenes. Local utility staff take the lead with local allies and customers. Staff is available as technical and administrative resources needed to get the work done

Key Lessons Learned

- Always paint the big picture and economics of programs throughout planning. Make sure all participants see clearly the economics of joint/coordinated offerings as opposed to running small scale efforts

- For new services, go into the field and step participating utilities through first hand what is involved rather than just talking conceptually about it

- Figure out and agree to plan exactly how large scale programs will be paid for at the start of the planning process. A solid plan will start with a budget target to work towards, use it to plan how the portfolio will be paid for up front

Key Lessons Learned

- Make sure to have an internal, centralized, well respected leader who LISTENS to members, and can work toward consensus. Management skills are paramount over technical skills for such a position

- Work with allies (wholesalers, retail stores and contractors) during the planning process, and during launch of the aggressive programs. Listen to them, and lean on them for their outreach and support

- Don't wait….start launching programs and trying things, make adjustments prior to being on hook for regulatory goals

- Next frontier … look to neighboring/overlapping utilities to partner with (e.g. natural gas utilities facing similar aggressive goals) Can this help you field more competitive $/kW or $/kWh programs?

7. Open Discussion …

Questions to Prompt

- What concerns do you have with energy efficiency programs overall?

- Largest challenges within your organization to get large scale results-oriented programs moving?

Unsolicited Advice

- Think positively, do what is in your control
- Top Objectives…what does YOUR ORGANIZATION want? How can these programs be used to that end?
- How can energy efficiency programs be used for pure business purposes?
- Don’t delay…start now, try things, adjust your plan as you learn

Resources

- American Council for an Energy Efficient Economy (www.aceee.org)
- E-Source (www.esource.com)
- EPA/Action Plan (www.epa.gov/eeactionplan)
- Energy Information Agency (www.eia.doe.gov)
- Lawrence Berkley Laboratory (www.lbl.gov)
- Northwest Power & Conservation Council (www.nwcouncil.org)

Follow Up Questions, Discussion

Thank You for Your Participation!

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