



# Energy Efficiency – A Proven Resource

Presentation for:

Michigan Utility Efficiency Programs  
Subcommittee

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# Presentation Outline

- Why should we pursue energy efficiency?
- How much is available?
- How much does it cost?
- Who should administer efficiency programs?
- WI's enabling legislation & recent changes
- Quick “Virtual Tour” of types of programs
- Lessons learned
- Questions/answers



# What Energy Efficiency Can and Can't Do

- **Can't replace all supply-side resources**
  - Need to reliably meet energy needs that can't be avoided or reduced
  - Need to modernize/replace older plants
  - Need to ensure reliable/adequate supply infrastructure
- **Can reduce the rate of growth in demand**
  - Accumulating savings over time in smaller increments
  - Needs adequate and consistent funding



# How Much Cost-Effective Energy Efficiency is Available?

- CA's energy efficiency/conservation efforts in 2001 produced a 5% reduction in electricity use
- CA's latest projections – can save 5900 mW over next 10 years (= 12 large power plants)
- Many other “potential” studies available  
Conservative estimate of .5-1% reduction per year  
(WI's growth rate = 2.5% per year – could cut in half thru efficiency)



# How Much Does It Cost?

State	Benefit/Cost Ratios Total Program Portfolios	Cost of conserved energy (\$/kWh)
CA	2.0 – 2.4	\$0.030
CT	NA	\$0.023
MN	1.3 – 7.0	
MA	2.1	\$0.040
NJ		\$0.030
NY		\$0.044
RI	2.5	
VT	2.5	\$0.030
WI	3.0	\$0.019
<i>Median</i>	<b>2.1 to 2.5</b>	<b>\$0.031</b>



# Statewide Strategy

- Better alignment with markets
- More efficient / lower costs
- Fair and equitable
- Opportunity for new models
- NY, NJ, MA, CA, ME, TX, OR, WI, & VT  
- some of the states that have chosen statewide strategies to pursue energy efficiency



## Types of Statewide Models for Energy Efficiency

- Utility administration (MA, NJ, CA)
- State government administration (WI, NY)
- Independent administration “Efficiency Utility” (VT, OR)



# WI's Original Enabling Legislation

- **“Public Benefits”** voted into legislation in October, 1999 (aka: Reliability 2000, Wisconsin Act 9)
- **Priorities:**
  - Focus on efficiency markets that are the least competitive
  - Improve environmental protection
  - Increase electric system reliability
  - Promote rural economic development
- **Ratepayer funding**
- Two components:
  - **Low income services** (full budget = \$45 - \$55m/yr)
  - **Non-low income = Focus on Energy** (full budget = \$62m/yr)
- Focus on Energy program in 5<sup>th</sup> yr of operation



# Political Developments

- Budget diversions over past 3 years (47% of non low-income budget)
- Several construction cases where additional conservation was mandated
- Governor's Task Force on Energy Efficiency and Renewable Energy – consensus recommendations in 10/04
- New Legislation (Energy Act 141) - 2/06 (32-1 in Senate; 94-0 in Assembly)



# Energy Act 141

## **Major relevant provisions of Energy Act 141:**

- No change to low income funding/program
- Secures the funding for non low-income
- Increases funding to 1.2% of gas & electric sales
- Continues statewide approach
- Provides regulatory certainty for utilities
- Allows utilities to retain dollars for programs for largest customers
- Allows largest industrial users to “opt out” and implement efficiency measures
- Several other provisions (increase in RPS standard, increased efficiency/renewables in state buildings, etc)



# WI's Administrative Structure

- General Oversight – Dept of Admin. (changing to PSC)
- Program Administrator – Wisconsin Energy Conservation Corporation (WECC)  
*(Competitive bids; 3 sectors - Residential, Business, Renewable Energy)*
- Environmental Research – Energy Center of Wisconsin
- Low Income Services – Dept of Admin.
- Evaluation – PA Consulting, Inc.



# Focus on Energy Programs

- Operational since June, 2001
- Balanced approach: short-term resource acquisition and long-term market change
- Types of services:
  - Technical assistance
  - Facilitation
  - Training & Education
  - Incentives
  - Infrastructure development
  - Marketing assistance



# Brought to you by.....

Over 3,000 market providers:

- 25 Manufacturers
- 55 Distributors
- 415 Builders
- 865 Retailers
- 265 Consultants/Architects/Engineers
- 1,050 HVAC Contractors/Plumbing
- 200 Electrical Contractors
- 55 Photovoltaic/Wind/Solar H2O Firms



# Brought to you by.....

More than 45 Trade Organizations

Examples:

- Home Builders Associations
- WI Restaurant Association
- WI Cast Metal Association
- Professional Dairy Producers of WI
- WI Innkeepers Association
- Midwest Hardware Association



# Brought to you by.....

All Class A utilities & participating muni's:

- Cooperative promotions
- Co-sponsored trainings, trade shows, events
- Call center referrals
- Bill stuffers/newsletters

Over 58 municipal/cooperative utilities who have piggybacked their own efforts with Focus programs



# 4 Year Results

<b>Demand Reduction</b>	<b>123 mW</b>
<b>Annual Energy Savings</b>	<b>811,000 mWh</b> <b>40m therms</b>
<b>Annual \$ Value of Energy Savings</b>	<b>\$100 million</b>
<b>Lifetime \$ Value of Energy Savings</b>	<b>\$735 million</b>
<b>Average Annual Expenditures</b>	<b>\$40 million</b>



# Other Proven Results

Other “public benefits” as reported in the Focus evaluations:

- ✓ **Economic impacts** (increased jobs, sales, and personal income)
- ✓ **Environmental impacts** (decreased CO<sub>2</sub>, SO<sub>x</sub>, NO<sub>x</sub>, Mercury)
- ✓ **Other non-energy benefits** (increased productivity, safety, health, morale, etc)



# Economic Impacts

- Jobs, jobs, jobs – efficiency is more job-intensive for WI than energy generation
- Efficiency keeps more \$ in State (WI spends 2/3 of energy costs - \$12 billion annually - on imported fuels)
- Bill savings give businesses more \$ to grow (increases competitiveness)
- Bill savings give consumers more discretionary \$
- WI businesses manufacture and/or sell many energy efficient products
- Reducing energy bill for public bldgs. = lower revenue requirement



# Focus – Economic Impacts

	1 <sup>st</sup> Year	5 <sup>th</sup> Year	10 <sup>th</sup> Year	Sum of 10 Yrs.
FT Equivalent Job Years	630	1,774	2,778	18,956
Sales Generated	\$46m	\$135m	\$224m	\$1,483m
Gross State Product	\$26m	\$85m	\$146m	\$934m
Personal Income	\$11m	\$66m	\$149m	\$779m



# Focus on Energy Cost Effectiveness

Benefit/Cost Ratio = 3.0

(including extended economic, environmental and other non-energy benefits = 5.70 B/C)

Cost of Conserved Energy in FY05:

= \$.011/kwh

= \$.05/therm



# Renewable Energy Program

Focus on Energy  
provides:

- Information
- Education & training
- Project facilitation
- Business development
- Financial incentives



# Assisting Development of the Solar Panel Business

- Solar Mining's Panel Manufacturing Facility in Green Bay
- Started in WI with Focus business grant
- Employs 12 full time
- Solar panels for heating large volumes of water
- 7 large projects completed, 14 in progress



# Wind Energy Development

- Public info, training, site assessments, help with permitting, incentives
- Wind Energy Workshop in Fond du Lac – 150 attended! (Wind Energy Toolbox CD)
- Issued grants for 36 wind energy systems
- Midwest Windgineering of Muskego looking for facility in Green Bay – will employ 100 people – making turbine towers, flanges, gearboxes, hubs

Twin Oaks Sawmill Facility in Hazel Green

# Solar Infrastructure Development

- Significant increase in firms offering solar services
- MREA has become certified solar training center
- Certified Solar Electric site installers – 29
- IBEW training last spring – Northeast WI

Urban Ecology Center in Milwaukee



# WI Technical Colleges Renewable Energy Centers

- Four centers created (Nicolet, Lakeshore, Madison, Milwaukee)
- Focus grants to install demonstration systems
- Training faculty and developing curriculum; coordinated effort among all 16 districts

Nicolet College in Rhineland

*proving the value of energy efficiency*



# Business Programs

- Commercial
- Industrial
- Agriculture
- Schools & Government
- Working upstream in the market channel
- Feasibility studies
- Project facilitation
- Demonstration projects
- Education & training
- Financial incentives

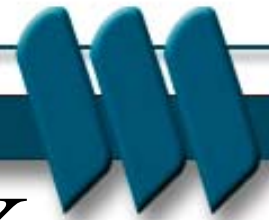


# Working “Upstream” in the Market Channels

Old 3.0 gpm

New 1.6 gpm

- Pre-rinse sprayers (est. savings of \$600/yr)
- Installed 400 in past yr
- No distribution in WI – Focus developed network of 7 distributors offering instant incentives
- Continued efforts to drive demand



# Working “Upstream” with Key Decision Makers

- Signed MOU’s with Roundy’s and SuperValue
- Energy audits in 60 Roundy’s stores; agreed to install all projects with payback < 3 yrs within 4-6 months
- Estimated savings of 200,000-700,000 kwh per store



# Promoting Best Practices in Process Energy use

- Target Key Industries  
(32% of all electricity, 58% of all gas energy, used by businesses)
  - Pulp & Paper
  - Metalcasting
  - Plastics
  - Food & Dairy)
- Partner with
  - Industry associations
  - Senior management
- Over 50 best practices case studies



# Building Relationships to “Sell” Energy Efficiency to Schools

- Positive change in school districts’ approach to energy management
- Eau Claire District implemented:
  - Turned off computers on weekends, holidays, etc
  - Pool covers
  - Reconfigured/de-lamped
  - Replaced HID in gyms
  - ASD on pumps and air handlers
  - Adjusted operating schedules
- Savings projected at \$2m over lifetime of measures



# Selling Non-Energy Benefits

- Waupun dairy farmer – Philip Hofman
  - Efficient gas water heater
  - VSD vacuum pump for milking operation
  - Heat recovery from compressor
- Benefits
  - Trims \$10,000/yr off energy bill
  - Improves milk quality
  - Brings additional \$.10/hundred lbs of milk



# Building on National Promotions

- Change-a-Light, Change-the-World
- 1,152,853 CFLs sold through almost 300 storefronts
- Partnered with GE, Menard's, True Value, ACE, Hardware Hank
- Negotiated \$500,000 in matching incentives
- EPA awards to GE and ACE



# Increasing Market Share for Energy Efficient Products

- Increased market share for furnaces with ECM motors – 5% to 22.8%
- Increased market share for 12 (& higher) SEER air conditioners – 10% to 22.7%
- Furnace motor and AC upgrades - 21 MW of savings in last 3 yrs



# Increasing Business for Retailers Who Sell Efficient Products

- Brothers Main – Appliance Store –Madison
- Commitment to making majority of products sold ENERGY STAR qualified
- Uses Focus reward program, training, labeling, and materials
- Increased market share dramatically
- Increased sales force by 30%; opened 3<sup>rd</sup> location



# Increased Sales for Contractors Promoting Energy Efficiency

- Balts Construction – Chippewa Falls
- Small 4-person home improvement company
- Attended general building science training sponsored by Focus on Energy and made commitment to “Home Performance”
- Grown to 15 field technicians
- Provides service throughout Northwest WI; weekly radio call-in show; promotes ENERGY STAR brand



# Lessons Learned

- Statewide design/delivery of energy efficiency programs can work
- Significant energy savings can be captured more cost effectively than energy generation
- Transforming markets and resource acquisition can go hand-in-hand
- Multi-year implementation, security and consistency in program planning processes and timelines can increase cost effectiveness
- Use and build the market provider capabilities for greater impacts and long-term sustainability
- Don't reinvent the wheel – lots of proven models (nationally and regionally)



Additional program information:

**[www.focusonenergy.com](http://www.focusonenergy.com)**

1-800-762-7077

Information about WECC:

**[www.weccusa.org](http://www.weccusa.org)**

800-969-9322