

## MEETING NOTICE

### **Governor's Task Force on Global Warming Conservation and Energy Efficiency Workgroup**

**Date: Thursday, August 30, 2007, 12:00 p.m. to 4:30 p.m.**

**Location: WECC, Training Room AB, 431 Charmany Drive, Madison, Wisconsin**

### AGENDA

- 12:00 p.m. Joint Meeting with Industry Workgroup
- Industrial energy efficiency program/initiatives (Scharff/Nichol)
- 1:00 p.m. Review Building Code Templates
- Commercial (Nesler)
  - Residential
    - Presentation regarding residential building codes
    - Discussion regarding residential building codes (Nilles/Thompson)
- 1:45 p.m. Review Lighting Efficiency Template (Nekola)
- 2:15 p.m. Break
- 2:30 p.m. Review Enhanced Energy Efficiency Savings Target Template (Stratton/York)
- 3:00 p.m. Review Rate Design Template (Draba/Edgar)
- 3:30 p.m. Review Appliance Efficiency Template (Edgar)
- 3:45 p.m. Review Consumer Education/Behavior Template (Kindig/Brandt or Kunz)
- 4:00 p.m. Public Comment
- 4:15 p.m. Wrap Up/Next Steps
- 4:30 p.m. Adjourn

#### **Templates to review at 9/6 meeting**

- State/Local Government Leadership (Plale/Hall)
- Demand Response/Load Management (Nick/Caucutt)
- Program/Funding for Non-Regulated Fuels
- Other

**This meeting is open to the public.**

**Note: Next meeting is September 6, 2007, from 1:00 p.m. to 4:30 p.m.**

**Location: MGE Innovation Center, Room 50, 505 South Rosa Road, Madison, Wisconsin**

**If you have any questions or need special accommodations, please contact Lisa Stefanik at the Public Service Commission of Wisconsin at 608-266-1125 or**

**[lisa.stefanik@psc.state.wi.us](mailto:lisa.stefanik@psc.state.wi.us)**

**Governor's Task Force on Global Warming  
Conservation and Energy Efficiency Work Group  
Policy Write Ups**

**Presented at 8.30.07 meeting**

**This packet contains the following write-ups:**

<b>Presenter</b>	<b>Subject</b>	<b>Version</b>
Clay Nesler	Commercial Building Codes	2
Bruce Nilles	Residential Building Codes	1
Katie Nekola	Lighting	1
Susan Stratton	Statewide Energy Efficiency Program	1
George Edgar	Innovative Rate Design	1
George Edgar	Appliance Standards	1
Margi Kindig & Janet Brandt	Motivating Behavior Change	1

# Wisconsin Global Warming Task Force Workgroup Energy Efficient and Green Building Codes

1. **Workgroup:** Conservation and Energy Efficiency Workgroup
2. **Policy Name:** Energy Efficient and Green Building Codes
3. **Policy Type:** Legislation for updating commercial building codes (chapter 63) and introducing a higher performance, voluntary commercial building code with incentives
4. **Affected Sectors, Sub-Sectors and/or Entities:**  
Sector: Commercial building sector  
Sub-Sector: Electric utility

5. **Estimated Greenhouse Gas Emissions Reduction Impact:** GHG Reduction in 2010 of ~~55,000~~ metric tons of CO<sub>2</sub> compared to “business as usual” for the commercial building code update and an incremental ~~36,700~~ metric tons of CO<sub>2</sub> for the high performance, green building code.

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6. **Estimated Costs:** Administrative costs for the enhanced commercial building code will be minimal beyond current efforts. Enforcement costs would likely increase in order to achieve a targeted level of 90% compliance. There would also be additional cost for education on the new code(s). Establishing an additional high performance, green

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building code based on BSR/ASHRAE/USGBC/IESNA 189P would represent an incremental administrative cost but less than that of creating a custom state energy code.

The cost impact of the accelerated permitting process would be neutral through fee adjustments for standard permit applications. The low interest loan (up to 0.5% of construction cost, with a per project cap) would be provided from a \$20M revolving line of credit created through public benefit funding. The loans would have a five-year term and can be repaid by owner/developers through the increased energy and operational savings of the high performance buildings.

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- 7. Specific Description of Policy Proposal:** This policy proposal consists of two distinct but complementary actions. The first would establish a policy of adopting the latest IECC code as the state commercial energy code (chapter 63) within one year of publication. This would start with adoption of the current 2006 IECC code in early 2008. Future versions of the IECC code will be based on the next ASHRAE 90.1 standard which is expected to increase energy efficiency in commercial buildings by 30%. This policy is consistent with Act 141 which requires three year review/updates and “consideration” of IECC, ASHRAE or other “generally accepted” energy efficiency codes. The second policy recommendation would be to establish a voluntary high performance, green building code based on proposed standard BSR/ASHRAE/USGBC/IESNA 189P. This draft standard, being drafted in code compliance language, includes a number of provisions and requirements to improve the energy and environmental performance of commercial buildings. The current draft standard would increase energy efficiency by 30% over ASHRAE 90.1-2007 and require

a minimum percentage of the peak electrical load to be provided by renewable power generation. This provides a convenient mechanism to enforce Executive Order 145 which mandates that state buildings be designed to be 30% better than code in energy efficiency. There are additional environmental benefits of green buildings including reduced water usage, improved indoor environmental quality and the use of recycled/recovered materials. Other green building standards (e.g., LEED, GBI) could be used as equivalent standards for compliance. The legislative options that should be considered to encourage compliance with the high performance, green building code include 1) mandatory compliance for state-owned facilities, 2) a fast-track permitting process for green buildings, 3) a 0.5% of construction cost low interest loan for private sector new construction and major retrofit projects and 4) a 0.5% of construction cost low interest loan for primary, secondary and higher education new construction and major retrofit projects.

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8. **Timetables, Duration and Stringency Option:** This policy of adopting the latest IECC model code and Standard 189 within one year of issuance would remain in effect until changed by law. Adoption of IECC 2006 would begin in 2008 while Standard 189 would be adopted one year after publication.. The stringency of the commercial building code is considered high due to state enforcement authority while the high performance, green building code is variable subject to incentives and other market conditions.

9. **Explanation of Rough Estimate of GHG Reductions:** For the enhanced commercial building code, the GHG reductions assume 12.5% average energy efficiency

improvement (half of the 25% 2006 IECC improvement due to current over compliance),  
90% participation, 31.6M ft<sup>2</sup> new construction and major retrofit per year for commercial buildings greater than 20K ft<sup>2</sup>, 17.1 kWh/ft<sup>2</sup> and 35.5 CF/ft<sup>2</sup> energy use. For the high performance, green building code, the GHG reductions assume an additional 30% energy efficiency improvement (beyond 2006 IECC) with 25% participation.

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10. **Rough Estimate of Costs for Selected Years:** The incremental cost of meeting IECC 2006 energy requirements can be considered very small due to the expected high current level of over-compliance to the current IECC 2000 based code. Recent studies (Langdon 2007) have shown that the average incremental cost of meeting a LEED-NC Silver rating is approximately one percent with a resulting annual energy operating cost reduction of 32%. The annual potential cost of the high performance building revolving loan program is \$19.6M with a five year term for each loan.
  
11. **Barriers to Implementation:** The primary barrier is the need for legislation to provide tax and other incentives to encourage widespread use of the high performance, green building code. There may also be opposition to the policy of automatically updating the state commercial building code to reflect the most recent IECC model energy code due to the uncertainty of future content and local impact.
  
12. **Other Factors:** Some of the GHG reductions claimed by enhancement of state building codes could be duplicated in other policy proposals including appliance

efficiency standards, public benefit funds and energy efficiency resource standards (EERS).

Wisconsin Global Warming Task Force Workgroup  
Template for Presentation Policy Options

1. Workgroup: Energy Efficiency and Conservation
2. Policy Name: Upgrade codes for new and existing residential buildings focusing on making significant progress toward achieving zero net energy buildings by 2030.
3. Policy Type: Establish minimum efficiency standards for existing and new single-family and multi-family residential buildings.

A. Existing Rental Buildings

There are approximately 106,600 rental buildings encompassing 486,800 housing units in Wisconsin. Small buildings with fewer than five units account for 90 percent of the buildings and more than 50 percent of the units (ECW, App. 181).

**Rulemaking:** The Department of Commerce should:

- i. Update and enforce existing Wis. Stats. 101.122(2), the Rental Unit Efficiency Standards (Admin. Code Ch. 67), to require at point of sale all covered rental properties comply with efficiency standards and include standards for “attics, sillboxes, heat and plumbing supply systems in unheated crawl spaces, showerheads, furnaces, boilers, air conditioners, appliances, lightening systems and storm windows and doors of rental units.” Wis. Stats. 101.122(2). This law was adopted in 1983 and Commerce has not issued regulations for most of these items. The Statute requires update every five years and was last updated in 1999. This update should include installation of high-efficiency boilers, appliances, CFLs or other high efficiency lighting in all areas, LED exit signs, etc.
- ii. Amend Commerce Admin. Code Ch. 63 to:
  - a. Update the lighting requirements consistent with California 2005 Title 24 energy code to require the use of high efficacy lighting in most applications.
  - b. Amend 63.0003 to remove the exemption for existing buildings that are modified to include the entire building when the modification is over \$X,000.

**Audit:** Assess the status of the July 9, 2004 “Rental Property Energy Inspection” recommendation from the Codes and Standards Workgroup that was included in the 2005 Governor’s Task Force on Energy Efficiency and Renewables report, including the efficacy of the existing enforcement mechanisms, and implement recommendations.

**Legislation:** Expand the Rental Unit Efficiency Standards in Wis. Stats. 101.122 to include rental properties constructed after 1976 and require energy efficiency upgrades whenever renovations exceed \$X,000. Alternatively, require upgrades at time of leasing units.

## B. Existing Single-Family Homes

**Legislation:** At point of sale or transfer or renovation of more than \$X,000 property must be upgraded to meet minimum, cost-effective efficiency standards. The upgrades should include projects with less than five year payback and include envelope insulation, pipe insulation, and high-efficiency lighting, and be integrated with Focus on Energy.

**Policy:** Focus on Energy should develop and market guide to buyers/sellers/realtors explaining how existing financing tools can be utilized to fund energy efficiency upgrades at point of sale.

## C. New Rental Buildings

**Regulation:** Amend Commerce Admin. Code Ch. 63 to:

- i. Incorporate new IECC standards (underway)
- ii. Update the lighting requirements consistent with California 2005 Title 24 energy code to require the use of high efficacy lighting in most applications

## D. New Single-Family Homes

**Regulation:** Commerce should expeditiously update the UDC to adopt new IECC standards, as well as adding Energy Star requirements for boilers, furnaces, lighting (CA Ch. 24 requirements) and, water heaters.

**Legislation:** Establish 3-year update schedule for UDC to incorporate new standards and remove any exemption to clarify that requirements apply to all additions.

4. Affected Sectors, Subsectors and/or Entities: Builders, realtors, landlords
5. Estimated Greenhouse Gas Emission Reduction Impact: TBD
6. Estimated Costs: TBD
7. Specific Description of Policy Proposal – See above
8. Timetables, Duration and Stringency Options: TBD
9. Explanation of Rough Estimate of GHG Reductions: TBD
10. Rough Estimate of Costs for Selected Years: TBD
11. Barriers to Implementation:
12. Other Factors:

## Wisconsin Global Warming Task Force Workgroup Template For Presentation Policy Options

1. **Workgroup:** Energy Efficiency and Conservation
2. **Policy Name:** Establish performance standards for high efficacy lamps for all major customer sectors—residential and commercial (which includes institutional, industrial and agricultural customers along with small and large business customers); Amend commercial building codes to require automated lighting controls in commercial applications.
3. **Policy Type:** Legislation to include lighting performance standards in building codes for all sectors, or establish performance standards for all light bulbs sold in Wisconsin; legislation to amend existing building codes to require automated controls (occupancy sensors, time-based controls) for commercial buildings.
4. **Affected Sectors, Sub-Sectors and/or Entities:** Residential and commercial customers, lighting manufacturing industry
5. **Estimated Greenhouse Gas Emissions Reduction Impact:** Using ECW estimate of 67 million CFL-compatible sockets in Wisconsin residences where none have been installed, and assuming that one CFL saves 35.8 KWh per year over incandescents, full compliance with the performance standard would result in approximately 2.8 million metric tons of CO<sub>2</sub>-e saved per year for residential use only. Lighting controls in commercial buildings

are estimated to offer energy savings of 35-50%. This is significant because lighting comprises over 45% of total electric consumption in the commercial sector, or 10,000 GWh per year (ECW). Thus, lighting controls in commercial buildings could save between 2.9 and 4.2 million metric tons of CO<sub>2</sub>-e based on lighting energy savings alone. There would be some additional CO<sub>2</sub> reductions due to reductions in cooling loads associated with reduced lighting loads. We are not able to estimate this additional benefit with information available to us at this time.

**6. Estimated Costs: TBD**

**7. Specific Description of Policy Proposal:** Recommend legislation to amend building code to include high efficacy lamp requirements similar to California's, mandating minimum lamp efficiencies for particular power ratings (lumens per watt). Also recommend legislation to include requirements for automated lighting controls for commercial buildings. These requirements could extend beyond new construction to apply whenever a building is remodeled, sold, or refinanced. There appears to be the greatest potential for energy savings from conversion to CFLs in residential buildings and from installation of automated controls in commercial buildings and outdoor commercial lighting, based on ECW's research.

**8. Timetables, Duration and Stringency Option: TBD**

9. **Explanation of Rough Estimate of GHG Reductions:** Rough estimates of the greenhouse gas reductions were made using an average emission rate of 1,850 pounds of carbon dioxide per megawatt hour. This is the average emission rate for electrical generation in Wisconsin, given the existing mix of power plants and emission rates for the state.

10. **Rough Estimate of Costs for Selected Years:** TBD

11. **Barriers to Implementation:** There may be legislative resistance to mandating technology changes. It may be necessary to offer incentives to reduce the up-front cost impact of installing more efficient lighting systems in order to encourage compliance, although such incentives may already be available through Focus. There may be consumer resistance to CFLs for aesthetic and cost reasons. There may also be resistance to requiring automated controls for all commercial applications---this might require more detail as to what types and sizes of lighting systems would be affected.

12. **Other Factors:** A wild\_card is the emergence of LED lighting; this technology seems on the cusp of commercial readiness; it will be important for any legislation not to require a specific technology; rather that performance requirements would be established as “lumens per watt”---and not in terms of the technology. This leaves the door open for LEDs and other advanced lighting options.

# Wisconsin Global Warming Task Force Workgroup Template For Presentation of Policy Options “Statewide Energy Efficiency Program”

1. **Workgroup:** Conservation and Energy Efficiency
2. **Policy Name:** Investment in statewide efficiency and conservation programs (aka public benefits)
3. **Policy Type:** Regulation (including innovative ratemaking policy to remove barriers for utilities), and enabling legislation to change current level of investment.
4. **Affected Sectors, Sub-Sectors and/or Entities:** Electric and Natural Gas Utilities, other fuel providers including propane and fuel oil.
5. **Estimated Greenhouse Gas Emissions Reduction Impact:** *(Relevant target year(s) should be selected based on timing of measure, with reductions estimated as of that year(s) and not on a cumulative basis, in comparison with a rough cut business as usual scenario. WRI will assist in this task. Later in the process, reduction estimates will be refined based on Reference Case developed for the Task Force.)*

Overall, reach 1990 levels of CO<sub>2</sub> by 2020 in electric generation, natural gas use, and other fuel use for heating and cooking. Using a statewide public benefits program, we recommend that 75% of the reduction to 1990 levels of CO<sub>2</sub> be reached and that additional measures such as innovative tariffs, advanced metering, load management and real time pricing be used to address the remainder. This assumes a BAU growth rate of 1.5-2.0%. Based on preliminary calculations (to be refined), the statewide programs should be able to address 1.5 percent of load (approximately) to achieve this goal (after a 2-3 year ramp up period. The utilities and PSCW should be given flexibility to be innovative in reaching these goals. Actual budgets should be determined periodically by the PSCW in a contested case hearing process. (Currently we expect 1.2% of revenue to result in a reduction of up to about .5% of load)
6. **Estimated Costs:** (Rough estimate of administrative costs and other material costs such as electric rate impact, for same years as selected for GHG reduction impact.) The state is currently spending 1.2% of electric and natural gas revenues on this effort as well as some additional funds for utility sponsored programs, tariff initiatives and other technical assistance. Additional funding would be needed to cover the cost of addressing propane and oil using customers. Using a ramp up approach, we should be reserving 3 to 5 times this amount (or 4-6% of revenue) by the end of the ramp-up. Actual budgets should be determined periodically by the PSCW in a contested case hearing process. (Currently we expect 1.2% of revenue to result in a reduction of up to about .5% of load). These costs should be compared to the cost of BAU which would include building new generation.

7. Specific Description of Policy Proposal: *(Description should be specific, including material terms so that people understand what is being agreed upon; however, legislative or regulatory language should not be drafted.)*

In order to maximize the result of this effort, we should accomplish these steps during the ramp-up period:

- Study best practices in other areas to transfer to Wisconsin as program grows
- Consider diversion of funds to high growth areas where this would provide an overall benefit to the state's energy customers.
- Request authority from Legislature for removal of 1.2% cap on expenditures beginning in calendar year 2010.
- Utilities will provide leadership in determining the best portfolio of approaches to reaching 75% of CO<sub>2</sub> reduction using energy efficiency as a resource. PSCW will approve plans in contested case hearing every 2-3 years.
- Research the gap between the achievable and economic potential of energy efficiency and how consumers and businesses make energy decisions. Create programs that will increase awareness, understanding and participation through social marketing, education, and outreach.
- Create programs of recognition and incentives for the most effective results.
- Address energy users' needs in an integrated manner rather than program by program.
- Incorporate feedback to customers on usage and costs with smart meters required for all new construction and major remodeling, with eventual complete change-out of old meters. Create savings opportunities for customers around this technology.
- Create a scorecard of achievement for the state, by sector or by utility or other geographic division or affinity group.
- Integrate individual utility efforts with statewide public benefits programs
- Create new ratemaking approaches to decouple sales from profits for utilities.

8. Timetables, Duration and Stringency Option: *(When will the measure take effect, how long will it last, how stringent will it be over time?)* This will take effect as soon as legislation is passed to remove the 1.2% of revenue limit. Earliest possible date is calendar year 2010. Preparation (as listed above) can begin in 2008.

9. Explanation of Rough Estimate of GHG Reductions: *(Concise, transparent and well-referenced explanation of estimate of GHG emissions reduction estimate for years selected, including description of important assumptions. Final number should be in million metric tons of CO<sub>2</sub> or other GHG.)* Using a baseline of about 55 million tons in 1990, and 69 million tons in 2006, this statewide effort should reduce CO<sub>2</sub> to 59-60 million tons by 2020. (To be confirmed by

WRI calculations). Other tariff based programs and utility efforts should provide the remainder of the reduction.

10. Rough Estimate of Costs for Selected Years: *(Concise, transparent and well-referenced explanation of estimates of administrative cost of policy for designated years and other key material costs that should be considered by the Task Force.)*
11. Barriers to Implementation: *(Description of barriers to implementation identified for policy, including technological, political and financial barriers, and where possible, recommendation on how to overcome these barriers.)*  
Legislation must be passed. We must be more innovative in investing in energy efficiency, using a best practice approach and an increased amount of customer education and outreach, as well as an integrated customer approach rather than a program approach.
12. Other Factors: *(Where relevant, identify potential duplication with other policies that may be recommended and other policy interaction issues which group believes the Task Force should be aware of.)*

The costs and projections will depend on the speed of implementation of other initiatives such as building codes, appliance standards, implementation of low carbon generation sources, energy intensity of businesses, and actual underlying growth rates. This recommendation makes no assumptions about PHEVs. Any strategy or recommendation that adds a significant amount of PHEV should separately address carbon effects particularly on baseload coal.



**Wisconsin Global Warming Task Force Workgroup  
Innovative Rate Designs**

- 1. Workgroup:** Conservation and Energy Efficiency Workgroup
  
- 2. Policy Name:** Innovative Rate Designs
  
- 3. Policy Type:** Public Service Commission of Wisconsin policy changes to better align utility rate designs with the impact of usage on global warming and the need for future energy infrastructure.
  
- 4. Affected Sectors, Sub-sectors and/or Entities:**  
Sector: Electric Utilities
  
- 5. Estimated Greenhouse Gas Emissions Reduction:** To be determined but together with Enhanced Energy Efficiency Programs expected to reduce annual gross sales by at least 1% per year
  
- 6. Estimated Costs:** Limited administrative costs to hold technical proceedings. New rate designs would likely result in a different distribution of costs among different customers depending in level and time of usage. Implementing new rate designs will create new costs for recovery by utilities including metering, billing, customer service, marketing and IT.
  
- 7. Specific Description of Policy Proposal:**
  - a. Background**

The process of rate design has traditionally been accomplished by the PSCW through specific utility rate cases to ensure that the rate design is appropriate to the characteristics of the utility and that such changes are subject to the establishment of a record on which the PSCW can make a decision. The PSCW has also

periodically used generic proceedings to investigate new issues and to make decisions and directions that can be followed up in individual utility cases. These processes should be utilized by the PSCW to define and delineate the principles and core objectives that individual utilities would use to develop and implement a menu of innovative new rate designs that will help mitigate the impacts of global warming as well as help reduce future utility cost exposure (e.g. help relieve tight supply/demand markets).

An effective rate design provides information to a customer about the cost to serve her or his usage as well as information about the best opportunities to reduce usage to lower her or his bill. But, an effective rate design will also reflect the impact of a customer's global warming footprint and the value of the steps that he or she can take to mitigate that footprint.

Wisconsin utilities have for many years used flat rates as the standard default rate offer for smaller customers. Voluntary time-of-use rates have also been available but have attracted limited participants (especially from customers who to meaningfully change their consumption patterns). Wisconsin commercial and industrial customers are on time-of-use rates that also include demand charges. The installation of new meter technology, especially for smaller customers has recently expanded the potential for innovative designs that can be efficiently implemented.

Improved rate designs and rate design options are necessary to provide better price signals to customers concerning their cost of consumption and that consumption's impact on global warming and the need to build new physical infrastructure or buy future new supply. A good rate design should better reflect costs that differentiate between demand at the time of system peak, on-peak and off-peak as well as when carbon costs are significant. The current flat rate and other rate designs provide very blunt signals about the effect of a customer's consumption on global warming or the need for new infrastructure and supply. Innovative rate designs are needed to better reflect these costs and to help to offset adverse global warming

impacts and mitigate the sources of future utility cost increases. These innovative rate designs in addition to providing better price signals should also facilitate the ability of customers to effectively respond to such price information to lower their overall bills. Such new rate designs are needed as soon as possible.

Effective, improved rate designs are both a source of efficiency savings in and of themselves (as customer modify their behavior or take action to reduce their bill) and a means to help facilitate other savings efforts such as Enhanced Energy Efficiency programs. It also needs to be recognized that the adoption of significant new rate designs like a substantial increase in energy efficiency efforts can create revenue stability problems for a utility that need to be addressed to eliminate a disincentive for a utility to implement such new designs.

**b. Recommended Action**

The GWTF Conservation and Energy Efficiency Workgroup strongly recommends that the PSCW with all deliberate speed open a proceeding(s) to investigate and implement improved and innovative rate designs for all customer classes that better reflects the impact of consumption on global warming and the need for new energy infrastructure and supply. This inquiry should: (1) provide appropriate price signal to customers that reflect the ultimate costs imposed on the utility to serve as well as impact on global warming; (2) provide effective opportunities for customers to respond to such price signals by reducing their overall bill (including during critical peak pricing periods) and (3) recognize that rate designs should be better integrated with demand response and energy efficiency opportunities as well as improved information and information pathways to affect customer behavior. These latter important linkages in the development of new rate designs should be specifically integrated in that process to create as valuable, seamless and easy a choice for customers to control their usage as possible. Utilities must also be provided the flexibility to offer a menu of appropriate rate designs.

We believe that the following areas must be investigated and addressed to develop more appropriate and effective rate designs:

1. Providing effective price signals through rate design must start with appropriate cost allocations to various customer classes and subgroups plus explicitly recognizing the impact of externality costs such as carbon (e.g. through carbon taxes or other means). Greater consideration of appropriate cost allocation to allow appropriate price signals (such as a transition to more marginal cost revenue requirements to better allow marginal cost rate designs) would help appropriate price signals from being constrained by cost allocations based on primarily on embedded costs. In addition, better allocation methods and factors should also be explored.
2. The PSCW should use the ability of improved metering to “customize” rate designs that better reflect the time of use and level of usage that affect the impact of usage on global warming and the need for future energy infrastructure. These ‘customized” rate designs should convey the costs – external and internal – of carbon emissions. For smaller customers, we urge the PSCW to specifically analyze and implement inverted rates and/or inverted time-of-use rates to better track and reflect the impact of usage on global warming (and in addition adequately address the situation of customers who have the least-financial ability to respond to such new price signals). For larger customers, we recommend an investigation or real-time pricing or improved time-of –use rates. For all customers, the PSCW should analyze more flexible time-of-use periods that can improve the ability of customers to respond to price signals during those periods as well as the use of interruptible riders to reduce carbon output.
3. The PSCW should also continue to improve utility buy-back tariff designs to both better reflect costs and benefits especially to recognize the carbon reduction value of customer-owned renewable energy.
4. The PSCW should address the potential disincentive of lost revenues from new rate designs that can discourage a utility from pursuing such designs.

This could be done in the same proceeding recommended to consider and address as necessary and appropriate the utility disincentives created by substantial increases in cost-effective energy efficiency initiatives.

**8. Timetables, Duration and Stringency Option:**

Improved rate designs that better reflect the costs of global warming and the cost of future supply to meet future consumption should be an immediate priority. While ensuring full participation by interested parties, the PSCW should pursue the development and implementation of improved rate designs with all deliberate speed. Effective opportunities for customer to respond to new price signals by lowering their overall bills should be developed and implemented as part of these innovative design changes.

**9. Explanation of Rough estimate of GHG Reductions:**

**10. Rough estimate of Cost for Selected Years:**

As previously noted, the main direct costs are for administrative proceedings although implementing new rate designs will create new costs for utilities potentially for metering, billing and IT.

**11. Barriers to Implementation:**

New costing approaches and the implementation of new rate designs will re-distribute cost responsibility among existing customers. To the extent that some customers incur greater cost responsibility from better aligned rate designs, they may be resistant to such changes regardless of the overall utility and societal benefits.

**12. Other factors:**

While providing better price signals of the cost of global warming and future utility costs is a necessary condition, providing customers effective options to respond to such price signal is the sufficient condition that allows customers, the utility and society to mutually benefit from lower future costs and diminished global warming impacts.

**Wisconsin Global Warming Task Force Workgroup  
State Appliance Efficiency Standards**

- 1. Workgroup:** Conservation and Energy Efficiency Workgroup
- 2. Policy Name:** State Appliance Efficiency Standards
- 3. Policy Type:** Legislation would be required to create state appliance/equipment efficiency standards for products not covered by federal government standards
- 4. Affected Sectors, Sub-Sectors and/or Entities:**

Businesses that manufacture, distribute or sell at retail the specified appliances/equipment

- 5. Estimated Greenhouse Gas Emissions Reduction Impact:** Based on an estimate by the Appliance Standards Awareness Project and American Council for an Energy-Efficient Economy, the enactment of state standards for approximately 15 items of equipment/appliances similar to those enacted by at least 10 other states (including CA., New Jersey, Connecticut, Oregon and New York) in 2006 would save 294,000 metric tons of carbon by 2020.
  
- 6. Estimated Costs:** Based on the ASAP/ACEEE estimates, the net present value of the reductions in bill savings for consumers is positive and would yield a NPV of approximately \$1,297,000,000 by 2030. Thus while there would be increased consumer costs from the higher incremental cost of the new equipment, these costs would be recouped by consumers over a payback period ranging from less than year to up to 6-7 years. (with many items having a payback of 1-3 years). There would also be some cost for administrative rulemaking to implement and revise the standards as established by the enabling legislation.
  
- 7. Specific Policy Description:** State appliance efficiency standards establish minimum energy efficiency levels for appliances and other energy-consuming equipment (typically for equipment not already covered by federal standards. These standards typically prohibit the sale of less efficient models within a state.

Appliance efficiency standards are a proven means for improving energy efficiency. Their objective is raise the efficiency of residential, commercial and industrial energy-consuming equipment where cost-effective to do so. Standards have proved to be an especially effective tool for addressing split incentive situations, emergency purchases and for mass market products where energy efficiency improvements may only be a small element but when aggregated provide a meaningful contribution to load growth (e.g. “plug loads”) and are difficult to capture through voluntary energy efficiency

programs. They also are an effective means to ensure that energy use reductions translate into lower greenhouse and other pollutant emissions.

**The recommended action** is that a specific appliance standard bill be developed for Wisconsin based on actions already taken in other states and be enacted by the legislature. The ASAP/ACEE proposed model bill standards for Wisconsin should serve a guide in the enabling bill development process.

- 8. Timetable, Duration and Stringency Option:** The sooner an acceptable state appliance efficiency standard can be developed and enacted. The sooner that important energy reductions can be achieved that will also reduce global warming the better. This is particularly important to begin to effectively address important contributors to load growth such as “plug loads” that are difficult to address by other means. The standards should stay in place until changed by law as part of a periodic review and upgrade process delegated to an agency by the enabling legislation.
- 9. Explanation of Rough estimate of GHG Reductions:** See #10 below
- 10. Rough Estimate of Costs for Selected Years:** Attached is the estimated costs and carbon reductions for certain years from the ASAP/ACEE Wisconsin model bill
- 11. Barriers to Implementation:** There is a need for legislation to enact a state appliance efficiency bill for Wisconsin. The most likely objections would be from the provider/retailer of a specific product/equipment included in the bill or concern about the impact of a specific included product on consumer costs. Meeting with interested providers and retailers of affected products as part of the bill’s development could help mitigate potential concerns
- 12. Other Factors:** A Wisconsin Appliance Efficiency Standard would achieve greenhouse gas savings and reduced energy costs from areas that are typically difficult to achieve by other means. It also helps as part of a broader portfolio of policy actions to diversify the cost impacts/incidence to reduce GHG emission rather than concentrating those mitigation costs primarily on a single set of entities or consumers (e.g. electric customers). This policy complements other policy actions such as Enhanced Energy Efficiency programs and improved Building Codes.

## **Wisconsin Global Warming Task Force Workgroup Policy Option: Motivating Behavior Change**

1. **Workgroup:** Conservation/Energy Efficiency
2. **Policy Name:** Coordinated Campaign to Motivate Sustainable Behavior Change
3. **Policy Type:** The goal of this policy is to encourage individuals, businesses, and other organizations to voluntarily change their energy behavior through a coordinated statewide and community-based social marketing campaign. Funding for the policy would require administrative action if funded through the PSC, or legislative action if funded as part of the state budget.
4. **Affected Sectors, Sub-Sectors and/or Entities:** Individual consumers, businesses, community organizations
5. **Estimated Greenhouse Gas Emissions Reduction Impact:**  
TBD  
This strategy has potential to start to deliver results within a very short timeframe (i.e. GHG reductions by 2010.)
6. **Estimated Costs:**  
Further research needed. Initial estimates based on experience in other States suggest that \$5m (\$1/person) annually might be enough to conduct a researched, targeted, coordinated campaign.
7. **Specific Description of Policy Proposal:**

It is not likely that efficiencies achieved through such measures as building codes, appliance standards, and rate structures will by themselves be sufficient to achieve the goal of reducing GHG emissions in the utility sector to 1990 levels by 2020. It is even less likely that such measures will result in significant short-term progress. Targeting consumer behavior has the potential to both achieve significant reductions quickly, and result in permanent behavior changes that, once firmly established, will eventually perpetuate themselves without the continuous infusion of dollars.

Social marketing aims to effect behavior change in a way that is beneficial to individuals and/or society. It includes, but is not the same as, advertising and education. Education may be sufficient to change the behavior of highly motivated individuals, while only a mandate may be effective in changing the behavior of others. Social marketing also targets the rather large group of individuals in the middle, and seeks to identify why they behave as they do, what barriers exist to changing behavior, and what incentives might induce behavior change. It might explore the use and effectiveness of such mechanisms as immediate feedback prompts (e.g. energy use meters), development of community

norms, commitments (especially public commitments), incentives (monetary and non-monetary), and communication (e.g. personalized e-mails).

This proposal is for a campaign that would, at a minimum, include

- A broad, market-tested and behavior oriented social marketing campaign;
- Deployment of various mechanisms to facilitate real-time feedback to consumers on their energy and carbon usage (e.g. energy use monitors, utility bill feedback)
- Support for innovative locally-driven initiatives to reduce energy usage at the community level (e.g. eco-municipality movement);
- Increased investment in K-12 energy education that encourages student engagement in climate change issues;
- Exploration of effective monetary and non-monetary rewards, recognition and incentives (e.g. California's 20/20 campaign);
- An annual carbon report card that details the state's progress on carbon reduction at the state and local level; and
- Ongoing research that evaluates the effectiveness of all components of this campaign and makes recommendations for changes in strategy as appropriate

Social marketing campaigns have been successfully used in many other areas of public policy. Here in Wisconsin, the Road Crew program has reduced drunk driving (*see* [roadcrewonline.org](http://roadcrewonline.org)). Nationally, social marketing efforts have been used to target drug use, obesity, and smoking. Although applying social marketing techniques to energy behavior is still relatively new, many other states have such programs, and are increasing the funding for such programs.

**8. Timetables, Duration and Stringency Option:**

A broad-based campaign to change behavior could potentially begin within one year of funding approval. While it may extend indefinitely, the expectation is that there would be significant investment in the early stages, with gradually reduced investments as results are realized. The voluntary nature of the response activity means stringency is low.

**9. Explanation of Rough Estimate of GHG Reductions - TBD**

**10. Rough Estimate of Costs for Selected Years: - TBD**

**11. Barriers to Implementation:**

The most likely barriers to this policy are:

- upfront investment cost
- difficulty of measurement/evaluation, and
- lack of understanding on the part of policy-makers of the proven effectiveness of such campaigns

The upfront cost barrier could be addressed by emphasizing the relative cost-effectiveness of this measure and the potential for realizing GHG emission reductions relatively quickly compared to other proposals.

The difficulty inherent in trying to assess the behavioral impact of this proposal is currently being addressed by other states, notably California, which has had such a campaign in effect for several years and is refining its evaluations. Wisconsin will benefit from other states' lead in this area.

Policy makers' lack of understanding of the effectiveness of broad-based campaigns such as this could be addressed by distributing information about proven, successful social marketing campaigns in other policy areas and looking to results in other states.

**12. Other Factors:**

Some of the policy options being considered by both the Conservation & Efficiency and Transportation work groups are included in this proposal because they are appropriately part of a coordinated campaign that would test and evaluate all possible approaches to changing behavior. Central coordination of these approaches is crucial both to maximize their effectiveness and to avoid the possibility that they could work at cross purposes.

# Paper, packaging & forest products

**How StoraEnso North America  
Manages Energy Conservation &  
Efficiency**

# How StoraEnso NA Manages Energy Conservation & Efficiency



- Mandate – global & divisional
- Awareness
- Set goals
- Measure
- Review
- Benchmark
- Efficiency committee / teams
- Conservation competition
- Pursue waste aggressively
- Seek help from others
- Reward results

# How StoraEnso NA Manages Energy Conservation & Efficiency



## Management Mandate

### ➤ **REDUCE ENERGY USE PER PRODUCT TON!**

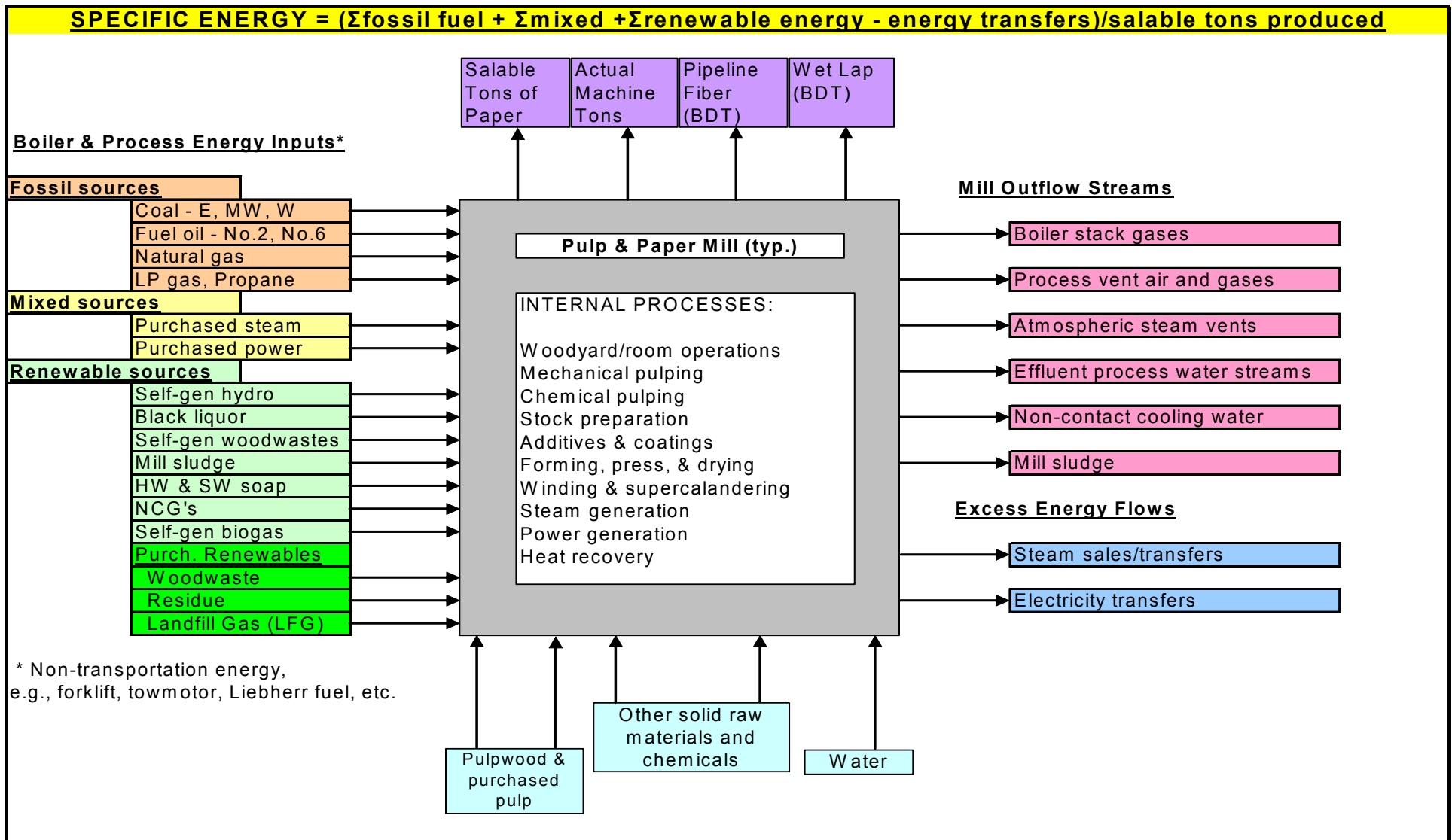
- Energy Efficiency Committee
- Goals & Expectations
  - Consumption per ton reporting
  - Consumption per ton reduction goals
  - Educate everyone
  - Brainstorm C/E ideas
  - Implement C/E
  - Monitor results
  - Report progress

# How StoraEnso NA Manages Energy Conservation & Efficiency



- Specific Energy = energy consumed per product ton
- Perimetric specific energy (site boundary)
  - Sum all incoming energy, subtract energy sold
  - Divide by tons you choose (salable, gross, etc.)
  - High degree of measurability, but be consistent
  - Apply energy reduction goal (%) to entire facility
- Process specific energy (PM, fiber line/dep't, etc.)
  - Measure/allocate energy, subtract condensate return
  - Divide by tons (prime, salable, BDT, etc.) – be consistent
  - Reduction goal can apply to production line
  - Results/trends meaningful to line personnel!

# How StoraEnso NA Manages Energy Conservation & Efficiency



# How StoraEnso NA Manages Energy Conservation & Efficiency



## Energy Efficiency Teams

- Corporate team
  - Meetings and mill tour
  - Energy reduction goals
  - Focus on consumption: cost savings will follow
  - Achievements:
    - 4-5% annual energy reduction
    - Monthly reporting
    - Best practices
    - “Do” list → “Done” list
  
- Mill teams
  - Mill Manager’s discretion
  - Various team types

# How StoraEnso NA Manages Energy Conservation & Efficiency



## Seek help and be resourceful

- Project funding - internal:
  - Competition for capital – conservation projects
  - Mill replacement budget (capital)
  - Mill routine maintenance budget (savvy)
  
- Project funding and technical assistance – external:
  - Focus On Energy®
  - Utilities
  - Industry groups
  - Federal agencies
  - Suppliers

# How StoraEnso NA Manages Energy Conservation & Efficiency



## Some causes of lower energy efficiency

- Culture, lack of awareness, or even apathy
- Inefficient equipment design, condition, or operation
- Cogeneration using condensing turbines
- Production of own mechanical pulp (vs. purchased)
- Non-recovery / non-use of secondary heat (e.g., TMP)
- Old or poorly maintained siphons, steam traps, etc.
- Startup/learning curve following major rebuilds
- Equipment ignored or defeated in rebuild
- No one person assigned to aggressively pursue energy waste, efficiency projects, conservation, etc.

# Focus On Energy

Program Update Meetings  
June 2007

# What is Focus on Energy?

- Statewide Programs
  - Energy Efficiency
  - Renewable Energy
  - Education Training
  - Financial Incentives

# Why Programs?

- Improve efficiency
- System reliability
- Promote rural economic development
- Consistent statewide geographic coverage
- Reducing environmental impact

# Focus on Energy Provides...

- Financial Incentives
- Education and Training
- Unbiased Technical Assistance
  - Do not endorse any company or specific product

# Focus on Energy Markets

- Renewable
- Residential
- Business

# Renewable Energy

- Biogas
  - Farm
  - Municipal/Industrial – not landfill gas
- Non Residential Biomass Combustion
- Solar Electric
- Solar Water Heating
- Customer Owned Wind
- Also Residential Incentives

# Residential

- Apartment and Condo Efficiency Services (ACES)
  - ENERGY STAR Lighting
    - CFLs, LED holiday lights, fixtures
  - Appliance and Plug Load
    - Water heaters, clothes washer, electronics
  - Home Performance with ENERGY STAR
    - Existing homes, remodeling, retrofit
  - Targeted Home Performance w/ ENERGY STAR
    - Limited income customers
  - Wisconsin ENERGY STAR Homes
    - New construction
  - Efficient Heating and Cooling
  - Information and Education - outreach
-

# Business Programs

- Four Sectors
  - Commercial,
  - Industrial,
  - Schools and Government
  - Agriculture
- Market Channel Programs
  - Lighting, HVAC, New Construction, Motors and Drives, Food Service, Commercial Specialty, Dairy,

# Two Types of Incentives

- Prescriptive
- Custom

# Prescriptive Incentives

- Common technologies
- One-for-one replacement
- \$20,000 per project limit
- No prior approval needed
- Streamlined application process

# Custom Incentives

- For projects that do not fit EXACTLY on the prescriptive form
  - Non one-for-one projects
  - Emerging technologies
- Must work with an energy advisor
- Must have Focus on Energy involvement PRIOR to installation

# Custom Incentives

- Tiers based on:
  - Customer economics
  - Market acceptance,
  - Inherent risk
- Two Tier Incentive Structure
  - **Tier 1** - \$.04/kwh, \$125/peak KW, \$.40/therm
  - **Tier 2** - \$.06/kwh, \$200/peak KW, \$.60/therm

# Changes to Focus on Energy

# Act 141

- Restructured Focus
- Transferred Oversight to the PSC
- Secured Funding
  - 1.2% of IOU Revenue

# Implications for Focus

- Increases budget for incentives
  - Annual Limit \$500k
- FY 08 will be an 18 month fiscal year
- Allows State facilities to participate
- No LP

# Eligibility Changes

- Eligibility based on both electric and gas utilities
  - For gas saving measures must have a participating gas utility
  - For electric saving measures must have a participating electric utility

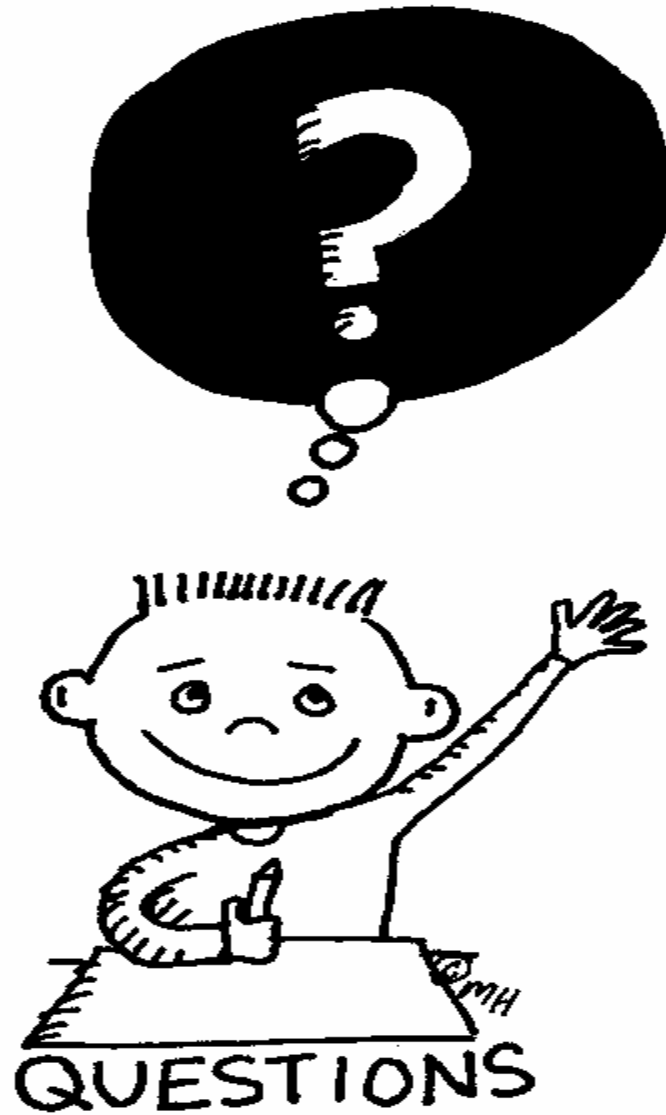
# Other Utility Initiatives/Programs

# Other Utility Programs/Initiatives

- Energy Incentives from We Energies
  - 55 MW over several years
  - Goal: reducing peak demand
  - Joint prescriptive program
- Wisconsin Public Service
  - 32 MW; goals are also to reduce peak demand, serve underserved markets
- Xcel
  - Hometown checkups, economic development efforts

# Other Utility Programs/Initiatives

- Alliant Energy
  - Shared Savings program
- MG&E
  - Offers energy audits to business customers; financing program
- Muni and cooperative utilities
  - Commitment to Community programs
  - WPPI's additional services
  - Dairyland Power's services



**GWTF Conservation and Energy Efficiency Group Meeting**  
**Thursday, 8.30.2007**  
**WECC**

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**Joint Meeting with Industry Group**

Two presentations were given to the joint meeting of the Industry and Conservation and Energy Efficiency groups. Both of the following presentations will be available on the [CEE web page](#):

- [Focus on Energy Overview](#) – John Nichol,
- [How StoraEnso North America Manages Energy Conservation & Efficiency](#) – Tom Scharff

Discussion of these presentations and Q&A followed. The Industry group is focusing on various energy efficiency initiatives. The Conservation and Energy Efficiency work group will share industry-related energy efficiency policies with the Industry group over the next few weeks to keep them informed.

**CEE Welcome / Housekeeping**

Our meeting will focus on highlighting several of the code write-ups from work group members.

**Presentation by Clay Nesler – Commercial Building Code**

Discussion includes:

- Do more than administrative costs. We need to summarize payback for those that actually implement higher building code standards.
- Who would administer the revolving loan fund? Loan administration funds should be built in. One suggestion is to add in 3% to 4% for administrative fees.
- Is the goal to get to zero energy buildings? Would we like to take that on as our end goal over the next two decades?
- Policy recommendations would be heard more strongly if we ID the parties responsible for taking action on the item. For example, we could say in our policy write ups on building codes “The Department of Commerce should take up the rulemaking process to rewrite the codes. . . “
- Reinforce that the code is an automatic update in one year for as many times as the code increases (linked to cycle of national code upgrades).
- We should change write up to be less specific to electric so that it is clear we’re including other fuel sources: Natural gas, propane, etc.

**Presentation by Bruce Nilles – Residential Building Code**

Discussion: Existing Rental Buildings

- Would a gut renovation code be covered under existing code obligations? If yes, what is the standard?

- If there is a code requiring action, any one who uses Focus money to update their building would be considered a free rider under Focus on Energy.
- Enforcement seems to be an ultimate problem, which may be under Department of Commerce's responsibility. Beefing up the certification requirement may help if the ball is dropping under inspection requirements.
- The key thing we'll need here is to better understand why this is not working. Who would do this audit?

#### Discussion: Existing Single-Family Homes

- The group generally agrees that the buyer should not be held financially liable to make energy improvements on an existing family home.
- Ideas include holding the seller liable and putting it more energy elements in the property condition report so that energy negotiations can be part of the sale.

#### Discussion: New Rental Buildings

- There may be overlap with the commercial building codes in regards to lighting.

#### Discussion: New Single Family Homes:

- Recommendation should track the national codes development or be updated every 18 mos.
- It would be desirable to develop enforcement approaches that help build-in quality rather than just have enforcement as a "red light" approach (e.g. Green Tier Clean Waters initiative)

### **Presentation by Katie Nekola – Lighting**

This write up focuses on CFLs for residential and automated lighting controls for Commercial sectors.

- Should we move automated lighting into the Commercial Building Codes?
- We could make a recommendation on examining day lighting alternatives as part of the next commercial code review. It could include an assessment of daylighting, and consider light pipes and automation to support appropriate commercial lighting.
- High performance green buildings will likely already be considering and/or implementing these energy efficiency lighting technologies.
- Does the current commercial code recommend outdoor lighting? We should consider recommending that exterior lighting not covered by building codes be addressed by a "dark sky" initiative through local action.

#### Performance standard for lighting:

- Could the market mature with us if we implement a state only mandate?
- We could set a lumen standard somewhere in the future (certain level by 2012)
- WI. could also work with neighboring states to set a regional performance standard

- Katie will examine proposed CA and federal lighting legislation and review it for next time.

Further suggestion for our lighting policies:

- We need to accelerate the use of LED traffic lights, exit signs and holiday lights. LED exit signs should be a component of the commercial code requirements.
- We need to pick our legislation points carefully. Will this be worth the savings that will result?
- In examining the innovation curve, certain innovation/adoption curves can be flat for a long time. Mandating them may spike this before.
- \*\* Get more info from DOT about what's going on in utilization of LED in the state. What is the level of market penetration?

### **Presentation by Susan Stratton – Statewide Energy Efficiency Program.**

Discussion includes:

- The PSC should establish a target to save of at least 1.5% of total annual sales. The Commission should recommend an adequate budget greater than the minimum 1.2% per year to achieve this target, but it would need JFC approval in order for the higher budget level to be available.
- If you achieve an energy savings target, and then follow it up with a new proposal (such as reduce electric sales by 2% of total sales in 2012, that policy could be effective. We should not recommend a removal of the current budget setting process established in Act 141. That is a sensitive safety cap that is important to the process established in Act 141.
- In talking about increasing spending, we should consider that utilities have spent more on energy efficiency before (there may not be the opposition to more expense that we anticipate). Conversely, we should consider increases first that we can get for low- or no-cost. The key is ensuring value for any level of expenditures.
- Right now, these numbers (estimates of growth, etc) are just the best we have. This is one wedge to reduce emissions in this state. But other policies from our group, and from other work groups, will continue to add reduction wedges to our total greenhouse gas emissions package.
- Can we look at load growth by sector?
- Do we want to pick a number based off of load, or a number connected with growth? The reason I picked at least 1.5% reduction in total annual sales is a number we can know can be achieved now (a combination of Enhanced Energy Efficiency programs and innovative rate designs). If we pick growth, we don't know what that number is.
- The Commission can increase funding to achieve at least an annual 1.5 annual reduction in total sales from Enhanced Energy Efficiency programs and innovative rate designs starting in 2009. It would be desirable to propose this percentage to the PSCW for its 2008 proceeding. It could help the Commission establish a goal. Hopefully growth numbers will be available, a new energy efficiency potential study will be available, we'll know more about available

funding, etc. We can use at least 1.5% reduction per year in total as our recommendation for now (the new floor), but we can recommend that the Commission set a number which flat lines growth when more information is available (but not less than a 1.5% reduction in total sales per year)

- This policy really only encompasses kWh. We should also consider gas savings, etc for future drafts. A 1% reduction in total natural gas sales would reflect the Governor's current commitment in the Midwest Gas Initiative and would provide a good target for future savings.
- Link energy efficiency initiative and savings to greenhouse gas emissions in a very public and regulated way.
- We should stress cost effectiveness (i.e. energy conservation and efficiency are the "least cost" resources to mitigate global warming and future utility costs and impacts.) Group discusses possible future debates, such as regional arguments over increased spending vs. emissions reductions.
- Natural gas should potentially get broken out for a much more thorough examination of proper targets, payback, etc. but at least an initial 1% reduction in annual sales would be a reasonable start.

### **Presentation by George Edgar – Rate Design**

The proposed rate design template recommends that the PSCW as soon as possible act to analyze and implement innovative rate structures that better reflect the cost of customer consumption especially for global warming impacts. Such innovative rate designs should also provide customers effective opportunities to respond to such improved price signals to lower their total bill and their GHG emissions footprint. This consideration should look at a variety of potential innovative rate designs including inverted rates and inverted time-of-use rates for smaller customers and real-time pricing for larger customers.

Recommended modifications to the proposed template were:

- Include natural gas rate design in the template.
- If we're going to combine the rate making and decoupling (from Mike Stuart) templates, we may suggest that the PSCW do the electric rate design first, as there is likely more carbon emissions reduction potential on the electric side but to acknowledge that innovative rate designs for both electric and natural gas should be important priorities.

### **Presentation by George Edgar – Appliance Standards**

The draft template enumerates a list of potential measures that Wisconsin could act to establish state efficiency standards for.

Discussion included:

- Can we please put the list of appliances directly in the template so that lay audiences will know what we are talking about?
- George to revise draft template and attach the "ASAP" list of potential measures

## **Presentation by Margi Kindig – Social Marketing / Consumer Behavior Change**

Draft template highlights the importance of increased efforts to effect customer behavior and decision making toward energy decisions to mitigate global warming. An initial R&D project is proposed to develop more effective approaches to influencing customer behavior.

- “Explore your energy” game a huge success.
- Asking key target audiences (focus groups?) can be a huge help to refining messages, etc.
- City commitments (local government) are popular in our state (covers 20% of Wisconsin’s population), but these groups need help (information, tools).
- This policy should stand alone, because it’s multi sector. We likely shouldn’t roll this into rate design or other policy recommendations as it would lose the multi-sector coverage.

### **At the next meeting**

Take new drafts (State & Local Government, Demand / Response)

\*\*Circulate revised item from Mike Stuart– send clean and redlined

\*\* Combine all templates into one pdf and resend as a record of what happened today.

### **Public Comment**

- George Penn offers to put off his comments to next week. He has 2 templates ready.
- Bruce Nilles offers to adopt George’s templates so that they become an actual agenda item.
- \*\* Lisa to send before next meeting.