MEETING NOTICE

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

Date: Thursday, August 23, 2007, 1:00 p.m. to 4:30 p.m.
Location: Madison Gas and Electric Company
Third-Floor Lunchroom Annex, General Office Facility
133 South Blair Street, Madison, Wisconsin

AGENDA

1:00 p.m. Introductory Remarks/Review of Agenda

1:10 p.m. Presentation Regarding State CEE Requirements/Efforts/Hurdles

1:40 p.m. Review Building Code Template (revised)

- Further information/discussion regarding residential, smaller commercial, retrofits

2:00 p.m. Review Draft Enhanced Energy Efficiency Savings Target Template

2:45 p.m. (approx.) 15-Minute Break

3:00 p.m. Review Draft Template Regarding Utility Incentives for Increased CEE

3:30 p.m. Continued Development/Prioritization of Policy Options for Further Analysis

- Appliance standards
- Lighting
- Program for nonregulated fossil fuels
- Consumer education/marketing
- State/local government/schools "Lead by Example"
- Load management
- Demand response
- Rate design
- Others

4:00 p.m. Public Comment

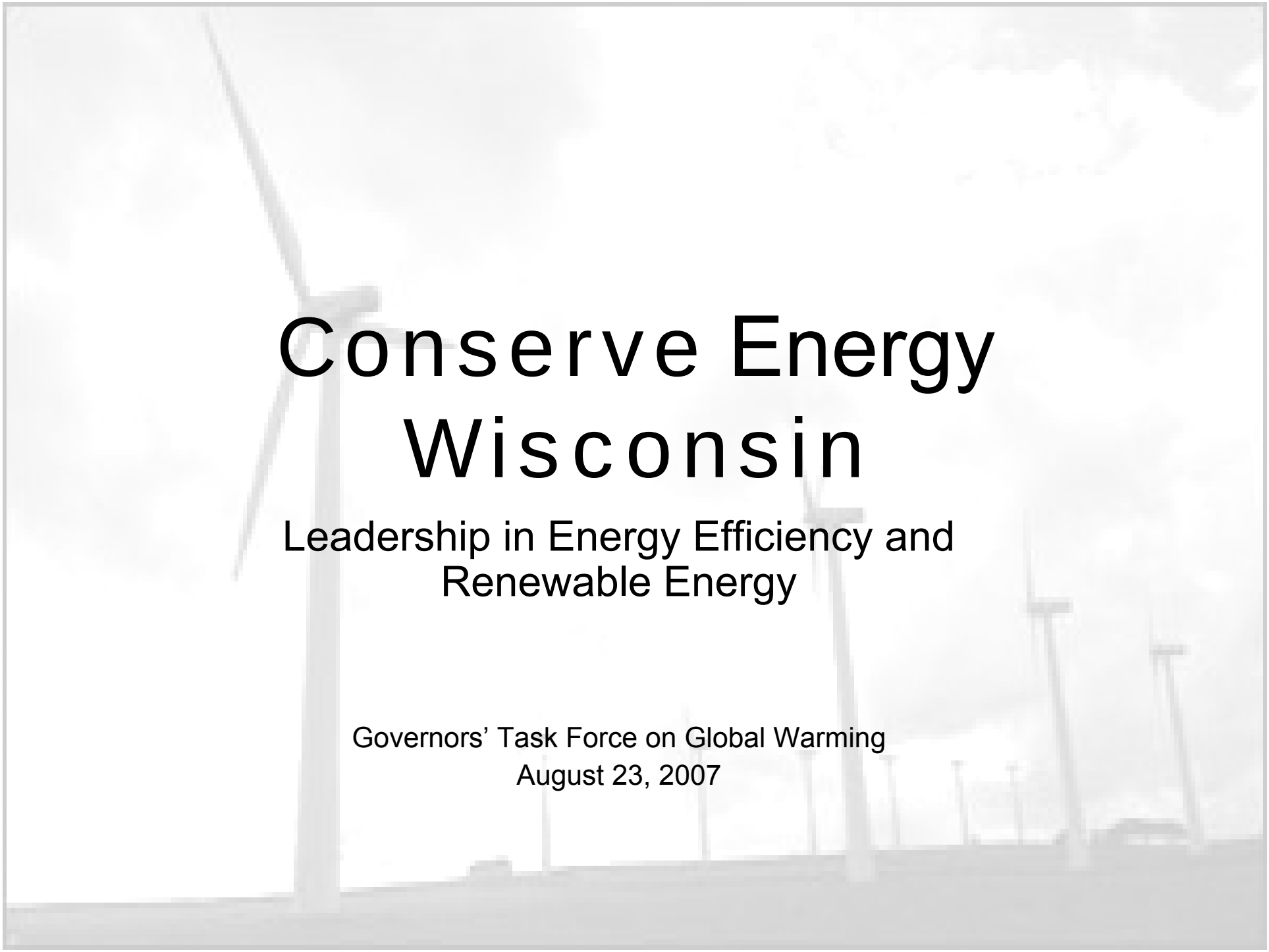
4:15 p.m. Wrap Up/Next Steps

4:30 p.m. Adjourn

Note: Next meeting is Thursday, August 30, 2007, from 1:00 p.m. to 4:30 p.m.
Location: Wisconsin Energy Conservation Corporation (WECC)
431 Charmany Drive, Madison, Wisconsin
Training Room AB

This meeting is open to the public.

If you have any questions or need special accommodations, please contact Lisa Stefanik at the Public Service Commission of Wisconsin at telephone at (608) 266-1125 or via e-mail at lisa.stefanik@psc.state.wi.us.



Conserve Energy Wisconsin

Leadership in Energy Efficiency and Renewable Energy

Governors' Task Force on Global Warming
August 23, 2007

Conserve Energy Wisconsin

- **Part of the Governor's 2005 Conserve Wisconsin Initiative**
- **DOA is taking the lead in energy efficiency & renewable energy in state facilities**
  - **New DOA policy**

Energy Efficiency Measures

- **Establishes energy reduction goals (based on FY05 levels)**
  - **5% Reduction per SF by June 30, 2007**
  - **10% Reduction per SF by June 30, 2008**
  - **15% Reduction per SF by June 30, 2009**
  - **20% Reduction per SF by June 30, 2010**

- **Establishes reporting requirement.**
  - **FY 06 & 07 information due October 31, 2007.**

Energy Efficiency Measures

- **Manage energy use and heating cost in all state-owned facilities.**
  - **Issued November 21, 2005**
  - **Energy use decreased 2.9 % in major facilities from FY05 to FY06**
- **Promote employee awareness and understanding of conservation measures.**
  - **Establish multi-building pilot program**

    State Revenue Building

    Badger Road Building (ETF)
    - **Results available in fall 2007**

New Construction

- **Adopted LEED – NC**
  - **Sustainability Standard for major construction projects.**
- **Master Specifications updated to require new construction to be 30% more efficient than Commercial code.**
- **Building Commissioning Specifications developed with Fall 2007 implementation.**
- **4 DSF project managers LEED accredited professionals**

Existing Buildings

- **Utility Bill Audits of 28 buildings completed**
- **Full Energy Audits of select DOA buildings completed.**
  - Implementing recommendations
  - DOA, DOR and ETF Badger Rd
- **Project established for LEED-EB assessments of 22 state buildings, DOA & DOR to be certified Silver**
- **Request For Proposal developed for Performance Contracting**
- **Working with Focus on Energy program**

Renewable Energy

- **Establish goals for purchase of renewable electric energy in six agencies:**
  - **DOA DOC DHFS**
  - **DPI DVA UW System**
  - **10% of total annual electricity by December 31, 2007**
    - **90,000 MWh (Average home is about 10 MWh/year)**
  - **20% of total annual electricity by December 31, 2011**
    - **180,000 MWh**
- **Establish demonstration projects for renewable technologies & alternative fuels.**
  - **Photovoltaic project at the State Capitol**
    - **Working with MG&E**

Procurement Policies

- **Establish equipment purchasing standards**
  - For all energy consuming equipment.
  - Working with the State Bureau of Procurement
  - Use Energy Star and Federal Energy Management Program standards
  - Use life cycle analysis to determine cost effectiveness of equipment
- **Training for all agency procurement / purchasing specialists**

Four Campuses Off the Fossil Fuel Grid

- **Five year time span, by 2011**
  - UW Oshkosh
  - UW Stevens Point
  - UW Green Bay
  - UW River Falls
- **Consultant Services Request to identify ways to meet this goal.**
  - Operating history of the campus
  - Energy conservation potential
  - Combined Heat and Power analysis
  - Opportunities for bio-fuel use and for renewable sources of electricity
  - Identify funding opportunities
- **WPPI wind study at UW River Falls**

Meter Verification and Energy Audit

- **Analyzed energy consumption data, utility invoices and utility metering for 28 DOA owned buildings**
  - Building energy use ranged from
    - 54,180 Btu/gsf/yr @ Green Bay SOB
    - 492,995 Btu/gsf/yr @ State Hygiene Lab
  - Average total energy cost is $1.59/gsf/yr
  - State owned meters calibrated annually
  - Billing and rate structure accurate

State Capitol Re-Lamping Project

- 75% complete
- Over 3000 CFL bulbs installed to date
- Annual Energy Savings 305,500 kWh
- Annual Dollar Savings over $22,000
  $176,000 cost savings over bulb life
- Annual CO2 Emission Savings 305 MTons
  - Equals taking 60 cars off the roads annually

Next Steps

- Central Madison Combined Heat and Power Study
- Bio-fuels Demonstration Study at UW Green Bay (bio-diesel in boilers)
- Renewable Fuels Use Demonstration Project at UW Madison (corn bran)
- Continue working with agencies to identify and implement energy efficiency projects
- Investigate options for renewable energy

For Additional Information

Contact:

Mike Stark, Director

Bureau of Operations Management

DOA/Division of State Facilities

Michael.Stark@wisconsin.gov

608-266-1173

Wisconsin Global Warming Task Force Workgroup
PSCW Consideration of Ratemaking Policy Changes

1. **Workgroup**: Conservation and Energy Efficiency Workgroup

2. **Policy Name:** Public Service Commission of Wisconsin (PSCW) Consideration of Ratemaking Policy Changes

3. **Policy Type:** PSCW policy changes to remove disincentives and create positive incentives to turn our utilities into engines to help accomplish CEE objectives. The policy changes also should explore any rate mitigation strategies to minimize customer impacts.

4. **Affected Sectors, Sub-Sectors and/or Entities:**
   Sectors: Utility

5. **Estimated Greenhouse Gas Emissions Reduction Impact:** To be determined (TBD)

6. **Estimated Costs:** Administrative costs for modifying PSCW ratemaking policies will be minimal beyond current efforts. There will be an administrative cost to the PSCW conducting the proceeding recommended below.

7. **Specific Description of Policy Proposal:**

   a. <u>Background</u>

   A major increase in end-user conservation and energy efficiency (CEE) can make an essential contribution toward meeting GHG emission reduction goals. While this will require additional expenditures, CEE can be accomplished in the near term, in contrast to many other GHG strategies. CEE therefore should be a very high priority.

   Successful implementation of a dramatic increase in CEE would substantially benefit from aggressive support by utilities. To obtain such efforts, it is essential to recognize that substantially increased CEE has the potential impact to erode a utility's current earnings and diminish its future profitability for two primary reasons. First, in the short term (between rate cases), to the extent energy sales are less than forecasted in the test year, the utility will under recover its fixed costs (which include a profit margin). This result is produced because some of the utilities' fixed costs (including return) are recovered through an energy (kWh) charges under current PSCW practice, on the theory that the inclusion of these fixed costs in the energy charge provides a better price signal to consumers. CEE and significant changes in rate design such as inverted block rates may contribute to lower sales than forecasted. Second, to the extent that aggressive CEE (or innovative rate designs) reduces sales, this will reduce the need for capital expenditures on future utility infrastructure. While this reduction provides

societal benefits, it also lowers earnings growth opportunities for utilities, since they are only allowed to earn a return on capital investment.

The potential interaction of traditional regulation and aggressive CEE or new rate design initiatives can create a tension between a utility's customer service objectives (controlling bills and achieving societal objectives) and a utility management's fiduciary duty to its shareholders. Left unaddressed, the conflict may create a disincentive for a utility to strongly support aggressive CEE efforts, as well as measures like stronger building codes, appliance standards, or new rate designs. The existing ratemaking paradigm creates these potential disincentives. In a carbon constrained world, parts of this paradigm may be counterproductive.

This policy recommendation proposes that the PSCW remove unnecessary disincentives (or create regulatory incentives) that turn our utilities into engines to help accomplish CEE, rather than potential obstacles. The policy changes also should explore any rate mitigation strategies to minimize customer impacts.

b. <u>Recommended Action</u>

The GWTF Energy Conservation and Efficiency Committee recommends that the PSCW, as soon as possible, establish a public proceeding to analyze the nature and extent of potential disincentives to utility support for aggressive CEE initiatives and identify and take the steps appropriate and necessary to address such disincentives. This inquiry should include both the potential need to remove specific disincentives and also the potential need for and design of effective mechanisms that would provide utilities a positive incentive to support aggressive CEE initiatives (such as allowing a utility to share in a portion of the net benefits created by its efforts or earning a return on its EE expenditures). It also should include exploration of rate mitigation strategies to minimize customer impacts.

8. **Timetables, Duration and Stringency Option:** Because these action(s) may be necessary to facilitate other actions, the PSCW policy changes should be initiated as soon as possible and thereafter implemented in each utility rate case. The policies would remain in effect until changed by the PSCW.

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

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

11. **Barriers to Implementation:** The primary barrier is the need for PSCW action to modify its ratemaking policies to achieve CEE objectives. There also may be opposition to the policy changes by certain electric utilities or customers due to perceived impacts on earnings or rates or principled objections to new policies.

12. **Other Factors:** Some of the GHG reductions achievable by new PSCW policies may be accomplished without such changes. The incremental impact on reductions is difficult to predict.

Governor's Task Force on Global Warming
Conservation and Energy Efficiency Work Group
Policy Write Ups
8.14.07 and 8.23.07

This packet contains the following write-ups:

Author(s)	Subject	Version	Date presented
Clay Nesler	Commercial Building Codes	1	8.14.07
Mike Stuart	PSCW Consideration of Ratemaking Policy Changes (*with redlined additions based on discussion*)	1	8.23.07
Mike Stuart	PSCW Consideration of Ratemaking Policy Changes *(clean version post-8.23 meetings)*	2	

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 63,700 metric tons of CO_2 compared to "business as usual" for the commercial building code update and an incremental 38,200 metric tons of CO_2 for the high performance, green building code.

6. **Estimated Costs:** Administrative costs for the enhanced commercial building code will be minimal beyond current efforts. Establishing an additional building high performance, green building code based on BSR/ASHRAE/USGBC/IESNA 189P would represent an incremental administrative cost but less than of creating a custom state energy code.

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. The legislative options that should be considered to encourage compliance with the high performance, green building code include 1) mandatory compliance for state facilities, 2) a fast-track permitting process for green

buildings, 3) tax incentives for the private sector to offset the incremental cost of compliance (with an amount not to exceed value) and 4) funding incentives to school districts to offset the incremental cost of compliance.

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), 100% participation, 33.4M ft2 new construction per year, 17.1 kWh/ft2 and 35.5 CF/ft2 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.

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%.

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).

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4. **Affected Sectors, Sub-Sectors and/or Entities:**
   Sectors: Utility

Deleted: Electric

5. **Estimated Greenhouse Gas Emissions Reduction Impact:** To be determined (TBD)

6. **Estimated Costs:** Administrative costs for modifying PSCW ratemaking policies will be minimal beyond current efforts. There will be an administrative cost to the PSCW conducting the proceeding recommended below.

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b. Recommended Action

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Deleted: T

Deleted: within _____ months

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

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12. **Other Factors:** Some of the GHG reductions achievable by new PSCW policies may be accomplished without such changes. The incremental impact on reductions is difficult to predict.

GWTF Conservation and Energy Efficiency Group Meeting
Thursday, 8.23.2007
MGE

Welcome / Housekeeping

We will be meeting at 12 noon on August 30th to have a joint meeting with the industry group.

Presentation by Deputy Secretary of DOA, Dan Schoof

** Dan Schoof presentation to be posted on GWTF CEE Group web site.

- Energy efficiency measures in place set reduction use goals by 5% reduction per sf by 6/30/07, increasing to 20% reduction per sf by 6/30/2010.
- Renewable energy on its way to be a part of the state energy mix – expect an announcement in Fall '07 to cover parties DOA will be purchasing it from. Our state is on track to meet goals in mandate.
- There is room for improvements on equipment purchasing standards. DOA would be open to ideas & suggestions.
- Off-grid campus project is moving forward; Consulting Services Request is currently in progress.
- DOA facilities have a wide variety of energy & fuel use.
- State Capitol Re-Lamping Project – over 3,000 CFLs installed to date and project is 75% complete.

Presentation questions include:

- Can energy saved at the state facilities via energy efficiency and fuel switching be converted into CO2 emission reductions?
- What is the payback on the re-lamping project at the Capitol?
- Why does the state make a 10-year commitment to buy renewable?
- Has DOA done anything re: behavior change – aka train its facilities staff, employees, occupants and visitors to consume less energy while in state buildings?
- Consider evaluation as an important part of the state changes that are implemented.
- Follow up with Transportation group –John Marx the person to work with at DOA about the Transportation Fleet questions.

Building Code Template:
This conversation was postponed due to the absence of Clay Nesler.
We will have more discussion about what to do with residential, smaller commercial and multi-family buildings.

Basic information on residential code from George:

- Commerce is looking at 2006 IECC Code. There may not be changes, but they are assuming when the LEG required them to look at the commercial code that Commerce would be asked to eventually look at the residential code as well.
- Handout shows some IECC Code for residential for 2006.
- CA code expands to examine lighting.
- Other states have analyzed additional opportunity – the number often seen is 15%. The goal is have easy compliance. IL recently recommended adopting the 2006 IECC and then making it 15% more efficient.
- Multi-family falls between both commercial and residential codes depending on size.
- Bruce provided a document that talks about POS in multi-family.
- Our group needs to determine if we want to adopt the 2006 IECC code, and / or if we want to go beyond. Would we like to pick out a number like 15%, or go beyond it?
- We also need to decide if we are going to address existing buildings.

Energy Efficiency Target Discussion (Susan Stratton)

Question for our group: What will it take to reduce emissions to 1990 levels by 2020 solely by energy efficiency?

- Susan presents data about energy efficiency offsetting carbon under a 'business as usual" scenario with current energy efficiency investments portrayed.

- Susan additionally put together a very aggressive scenario that amplifies the "business as usual" for just enhanced energy efficiency programs. This is the scenario that gets to the carbon emissions goals through enhanced energy efficiency programs alone.

- Group discussion acknowledges that our recommendation should include our enhanced EE program and its funding getting bigger.

- We need to combine this recommendation for enhanced energy efficiency programs with other innovative things such as a tariff, social marketing, building codes, appliance standards etc to balance a higher recommendation for all EE options as part of the overall carbon reduction policy.

Discussion to refine this policy write-up / recommendation:

- A suggestion comes out to use Net Present Value as a true measure of the financing of energy efficiency.

- How much is being invested in new power plants? In operation? How does efficiency compare? Any information that can be put in our analysis to compare the cost of efficiency to generation, etc will add strength and validity to our policy recommendation.

- ** Kathy Kuntz from WECC will get more up-to-date savings / target information on current FOE and other programs to Susan for further analysis.

Recommendation for Susan's write up: Aim for at least 1% of reduction in annual sales in the near term from enhanced EE programs alone. Our group can potentially tackle other growth and GHG emission reductions through other policies (rate design/demand response, building codes/etc) that can better diversify and lower the total cost of EE

- Put out a portfolio package from our group that shows emission target achievement.

- What is the rate impact of a boost in the energy efficiency program? Discussion noted that rates will in the short term go up but bills will likely go down for participants immediately and for all over time. The group does not want to frame recommendations as cost reductions. Rates will likely continue to go up in the future due to a large variety of factors than just increased EE programs.

- Any attempt to capture long-term cost effectiveness should be included and encouraged through innovative funding and other means.

Utility Incentives for Increased CEE – PSCW utility ratemaking.

Question for our group: How will utility rates be affected by other recommendations (such as increased EE) by our group?

- Goal is to make utilities a partner in this effort – under the current system, the utilities cannot expand profits if growth does not occur.

- Policy docket by the PSC. Open it soon to create a coordinated effort. Energy Efficiency or rate design changes can cause revenue instability, so this is why our group would push this forward.

- The PSC has a docket on its plate via Act 141 to examine energy efficiency & renewables. Does this play in? The group suggests this is complementary.

- This issue is occurring nationally (e.g. potential new filing on the way from Duke Energy re: allowing a profit margin to the utility to operate in increased energy efficiency).

- The PSCW should determine the need for any actions for the different types of utilities present in Wisconsin.

- Mike S. to update policy to reflect that docket should be started 'as soon as possible' and will make it more inclusive (to include gas in addition to electric utility).

Continued Discussion on Additional Policy Options for the CEE Group:

How will we move forward procedurally?

- Enhanced EE target: Susan Stratton, Dan York, Kathy / Janet Brandt to provide data
- Load Management / Demand Response: Bruce Caucutt and Barb Nick
- State Leadership / Local Gov't / Schools: Senator Plale, Nick Hall
- Lighting: Katie Nekola
- Building Codes – Commercial: Clay Nesler.
- Building Codes -- Residential: Bruce Nilles with help from Mike Thompson
- Utility Incentives – Mike Stuart / Kristine Euclide
- Rate Design – Roman Draba and George
- Appliance Standards – George (given that he already found much of the data)
- Consumer Ed / Behavior Changes – Janet / Susan Stratton

Presentations next week (Industrial Focus)

- John Nichol – Focus on Energy Industrial
- Tom Scharff – Stora Enso

Policy Option Discussion scheduled for next week –

- Building Code – Commercial
- Appliance Standards
- Rate Design
- Lighting
- Consumer Behavior / marketing

Policy Option Discussion scheduled for Sept 6 –

- State lead by example
- Building Code – Residential
- Demand Response (include smart metering options, etc)

Public Comment

George Penn

- Program for nonregulated fossil fuels -- propane, oil and biomass
- George analyzed energy statistics from Focus and state on Propane and oil use.
- George would like to present projection information next week.
- Kathy asks for a recommendation for program funding.

George would also like to write up a policy in support of Electric Water Heating conversion / switching (demand side).

** Group members ask for a list of 'who's doing what' policy write-ups.