MEETING NOTICE

Governor's Task Force on Global Warming
Industry Work Group
Date: Wednesday, October 3, 2007, 9:00 am – 12:00 noon
Location: room 413, GEF 2,
101 South Webster St., Madison

DRAFT AGENDA

SPECIAL NOTE: THERE IS A FIRE ALARM TEST SCHEDULED FOR AROUND 11:00-11:05 AM - APOLOGIES FOR THE INTERRUPTION

1) Welcome and review of agenda

2) Open Meetings issues and questions

3) For next meeting: presentation by John Nicol – Focus on Energy / SAIC – what ideas/questions/specific information would we like from him?

4) Discussion of Wisconsin Industry Emissions data

5) Discussion/review of policy templates presented last week

6) Presentation by remaining Subgroups on their rough policy template, including committee discussion and identification of data needs.

7) Establish future meeting times

    a. October 12th?
    b. Beyond?
    c. Locations?

This meeting is open to the public.

For more information, or if you need special accommodations to attend this meeting, contact Nick Sayen, DNR, at (608) 267-2466 or Nick.Sayen@wisconsin.gov

Wisconsin Global Warming Task Force Workgroup Template for Presentation Policy Options

1. **Workgroup**: Industry Work Group

2. **Policy Name:** Workforce development for GHG reduction related jobs

3. **Policy Type:** (Fiscal measure, regulation, legislation, voluntary R&D, market based mechanism, etc.)

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

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.)

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.)

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

- Organize workforce development and career ladders in "green collar" jobs by convening employers, tech colleges, UW, job centers, unions, etc. Key questions are: What jobs exist/where will labor shortages be (i.e. skilled trades); what training is needed to secure these jobs/advance into them; who is looking for work and what skills do they have/need.
- Develop "green collar" education programs and certification programs - consider green building; building efficiency audit and retrofits; solar PV and solar thermal installation and maintenance; wind installation and maintenance; bio-fuels production and distribution, geothermal installation and maintenance; renewable and efficiency component manufacturing; etc.

8. **Timetables, Duration and Stringency Option:** (When will the measure take affect, how long will it last, how stringent will it be over time?)

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_2 or other GHG.)

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.)

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.)

Wisconsin Global Warming Task Force Workgroup Template for Presentation Policy Options

1. Workgroup: Industry Work Group

2. Policy Name: Outreach/extension/education about GHG reduction to business, especially small business.

3. Policy Type: Education and facilitation.

4. **Affected Sectors, Sub-Sectors and/or Entities:** Small entrepreneurs, UW and Technical College Systems.

5. **Estimated Greenhouse Gas Emissions Reduction Impact:** This is a policy that can be implemented immediately with little initial seed money. However, there may be some cost in overcoming barriers, but initially small entrepreneurs can be expected to act in their own best interest in choosing energy savings.

6. **Estimated Costs**: This policy would require some organization to initiate, but since the UW and Technical College Systems are already active in this area the effort could be turned over to them within a couple of years.

7. **Specific Description of Policy Proposal:** Information flow to entrepreneurs, especially small entrepreneurs, tends to be constrained by the time and money available in the context of many competing priorities. With regard to GHG reduction Wisconsin is fortunate that both the UW and Technical College Systems have existing outreach programs on energy efficiency so the information conduits already exist. These efforts go back at least 10 years so there is some awareness within the small entrepreneur sector. In some cases the needed technology is already available. What is proposed here is to enhance existing information flows and address current barriers to adoption of more energy efficient methods.

8. **Timetables, Duration and Stringency Option:** This effort could start as early as desired, however the barriers to adoption should be addressed first for better results.

9. **Explanation of Rough Estimate of GHG Reductions:** See Barriers

10. **Rough Estimate of Costs for Selected Years:** See Barriers

11. **Barriers to Implementation:** There are two major barriers to more extensive deployment of energy efficient methods, cost and permitting. Both of these increase the perceived cost of innovation and hence reduce the perceived ROI.

To address the permitting barrier the UW and Technical College and DNR personnel should be brought together to develop “best practices” in getting permits issued expeditiously. If necessary DNR should have a “public intervener” position who’s role would be to shepherd GHR permits through the process. Indeed it may be feasible to create a class of permits with significant reductions which would be deemed approved if DNR did not act in 30 days.
The second barrier to more extensive deployment of energy efficient methods is cost. Because the investment may be too large or “lumpy” especially for small businesses there may be a need

to provide means to reduce or spread the costs. Two possibilities are to create a pool [via say a CAPCO type instrument] that can provide revolving longer term loans, second to increase funding to the existing technical assistance channels [again via say a CAPCO type instrument] to reduce the cost of instillation if that is the barrier.

12. **Other Factors:** It may be argued that a more efficient use of public funds would be to focus on large energy users which give a higher GHG reduction per replacement. However it may also be argued that small employers can serve as a potent local demonstration that GHR matters and brings economic gain. In that context small entrepreneurs can demonstrate that it is possible to move out of a carbon based economy.

Wisconsin Global Warming Task Force Workgroup
Presentation of Policy Option

1. **Workgroup:** Industry Workgroup

2. **Policy Name:** Public funding of technology demonstration projects

3. **Policy Type:**
   a. Legislation to increase the R&D tax credit rate to 15% from 10% for small engines
      i. Expand scope of tax credit to include power products such as fuel cells, generators, and other technology
      ii. Promote power technology leadership in Wisconsin
   b. Legislation to create program to fund pilot projects or field demonstration of innovative technologies to reduce GHG emissions

4. **Affected Sectors, Sub-Sectors and/or Entities:**
   Affected sector: Industry
   Sub-sectors: Research and Development, Manufacturing

5. **Estimated Greenhouse Gas Emissions Reduction Impact:**

6. **Estimated Costs:** $5 Million per year in project funding

7. **Specific Description of Policy Proposal:**
   a. The R&D Tax Credit increase policy would increase the R&D Tax Credit for Small Engines to 15% from 10%. The policy would also increase the scope of the tax credit to other power products. This policy will help to solidify Wisconsin as a world leader in engine and power technology development
   b. The pilot project funding policy would provide a mechanism for the funding of technically solid projects that can demonstrate the commercial viability in Wisconsin of technical innovations that will improve GHG emission prevention or control. The funding will assist technologies that can help reduce emissions while promoting new industries and jobs in Wisconsin, improve industrial

productivity and reduce control costs. $5 Million will be available per year to fund pilot projects and field demonstration projects. The following are elements of the funding program:

- Goal is to fund gap between proof of concept and marketable product
- Funding limited to pilot projects and field demonstration of technology or innovation in the private
- Administration of the program will be by the Wisconsin Department of Natural Resources
- Funding will be limited to no more than 50% of the project budget
- Funding will be limited to R&D expenses; no funding of marketing expenses
- Submissions of projects for consideration will require project plan
- Final report required
- Selections of projects will be made by a panel (who should be on the panel? WDNR, WDOC …)
- WDNR will regularly oversee progress of selected projects
- Technology developer will retain rights to intellectual property

Criteria for a project to be selected for funding:

- Must have potential for Wisconsin economic benefit
- Limited to parties with a presence in Wisconsin?
- GHG reduction potential in Wisconsin
  - Fuel conversion
  - Emission control
  - Energy saving innovation
- In scope:
  - Product related technology (engines, industrial machinery, etc..)
  - Manufacturing process improvements
  - Technology that reduces direct GHG emissions
  - Technology that results in improved fuel economy
  - Technology that results in improved energy efficiency
- Out of scope:
  - Energy conservation projects
  - Energy efficiency projects using available technology

8. **Timetables, Duration and Stringency Option:**
   - Funding beginning FY09 continuing annually through 2020
   - Program review every 5 years

9. **Explanation of Rough Estimate of GHG Reductions:**
   - **a.** GHG reductions will be calculated by project technology based upon the baseline calculation of emissions prior to implementation of the technology and calculation or estimate of emissions after implementation of the funded technology project
   - **b.** A number of performance measures could be tracked in the program including (funding $/emission reduction) or other measures of economic benefit to Wisconsin

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

11. **Barriers to Implementation:** Barriers to implementation may be:
    - challenge of funding the program
    - maintaining funding
    - setting criteria that attract effective projects that will benefit Wisconsin.
    - Providing an incentive for a manufacturer to address GHG reductions while complying with product related emissions regulations

12. **Other Factors:**
    - **a.**

Wisconsin Global Warming Task Force Workgroup-"Emissions Data Feedback Policy"

Draft 9-29-2007-Linzmeyer

1. **Workgroup:**
   Industry Work Group

2. **Policy Name:**

Explore opportunities for companies and organizations for recognition for early actions of going beyond "business as usual". Identify and evaluate state policies that would create an innovative and robust way to ensure that Wisconsin businesses get credit for the early actions to reduce GHG emissions.

3. **Policy Types:**
   a. Legislation and funding authorization;
   b. Voluntary industry best practices systems;
   c. Legislation: special study of relationship between GHG reduction & quality job growth

4. **Affected Sectors, Sub-Sectors and/or Entities:**
   a. All Industry Sectors, Sub-Sectors, and Entities (Facilities) using on-site power generating sources

5. **Estimated Greenhouse Gas Emissions Reduction Impact:**

   a. Target should be 3-5% reduction annually from all sectors combined.

6. **Estimated Costs:**
   a. Operational costs would be negligible and could be estimated by looking at a similar effort from the Wisconsin Forward Award, which operates a similar model for workplace quality that we are proposing for workplace environmental best practices.
   b. State government should add incentives (i.e. grants, loans, tax credits, etc.) and technical assistance through UWEX etc. to help businesses, especially medium to small-size, design and execute energy auditing and GHG measuring programs that will in part provide GHG emissions data.
   c. An independent board would have oversight over the finances, policies, etc of the organization.

7. **Specific Description of Policy Proposal:**
   a. The Wisconsin Stewardship Council (as a policy advisor council of the DNR's Green Tier Program, but also in collaboration with Commerce Department) will publicize and leverage major corporate sustainability initiatives and build business leadership support for environmentally sustainable best practices.
      i. The council will be made up of an equal collaboration of Business, government and NGOs that are leaders in the environmental and emissions fields or in enacting best practices.
      ii. This would be Available to those companies with a clear desire to go beyond compliance
      iii. If a company has had a recent infraction, they can still become part of the program with regular audits of agreed upon benchmarks.
   b. They will develop a self assessment protocol which companies can use to qualify for and annual award, similar to the Wisconsin Forward award. The award could be given at different levels of achievement.
   c. They will put a business case for environmental sustainability and market it through a website, regional summits, collaborations with business groups like Chambers of Commerce and regional economic entities, etc

d. Program will be self monitoring, with required EMS with experts coming to companies to evaluate progress against award criteria

8. Timetables, Duration and Stringency Option:

a. Annual

9. Explanation of Rough Estimate of GHG Reduction:

a. As the business case for environmental sustainability is spread to more businesses, the resulting reduction could be phenomenal. We would need actual data on business emissions to be able to predicts the results.

10. Rough Estimate of Costs for Selected Years:

a. Program management costs for State Government, the DNR and Commerce, are minor, but still need to be estimated.
b. Costs to private industry will be significantly larger and need to be carefully assessed and estimated on a facility level where business units in both large and small companies are typically defined. These estimates, including data collection and reporting burden that needs to be generated as part of the initial program design process, will help determine precisely the type and detail of information to be collected from industry, the reporting periods, and format.

11. Barriers to Implementation:

a. Reluctance of industry to adopt yet another self-reporting requirement due to direct expense of periodic data collection and reporting, and concern that data will result in future imposition of GHG emissions control requirements and expenditures.
b. Adequate funding of government program resources, especially resources to administer data collection and reporting program; gather, collate, evaluate, and disseminate reported data from/to industry and the public; and ensure compliance with emissions data reporting requirements.

12. Other Factors:

a. To be determined.

Wisconsin Global Warming Task Force Workgroup Template For Presentation Policy Options

1. **Workgroup**: Industry Workgroup
2. **Policy Name:** General incentives for industrial energy conservation and efficiency.
3. **Policy Type:** Incentives to encourage industrial sector businesses to conserve energy and implement energy efficiency projects.
4. **Affected Sectors, Sub-Sectors and/or Entities:**

   Sector: Industrial Sector.
5. **Estimated Greenhouse Gas Emissions Reduction Impact:** Will depend upon the breadth and scope of implementation of industrial energy conservation and efficiency projects. It is assumed that the availability and attractiveness of the incentives will directly impact the extent to which conservation and efficiency projects are implemented. WRI data suggests 21 million metric tonnes of CO_2 equivalent emissions are attributable as indirect emissions due to industrial electricity consumption, and 15.9 million metric tonnes of direct industrial CO_2 equivalent emissions. If conservation and efficiency incentives were able to achieve a net 5% reduction in direct and indirect industrial emissions, that would result in a 1.84 million metric tonnes of CO_2 equivalent reduction.
6. **Estimated Costs:** Unknown, as funding levels would be determined by the Legislature.
7. **Specific Description of Policy Proposal:** Establish incentives for industrial sector businesses to implement energy conservation and efficiency projects, practices

and measures resulting in reduced energy consumption from non-renewable sources. Potential incentives could include:

a. **Monetary incentives**. These could take the form of cash grants for the purpose of (1) conducting comprehensive energy audits and implementing corresponding measures to improve energy efficiency or to conserve energy; or (2) purchasing replacement or retrofit equipment that is more energy efficient.

b. **Tax incentives.** Provide a refundable tax credit for the purchase equipment or other capital expenditures that will result in quantifiable energy savings. The percentage of the credit could be flat, or set to a sliding scale based upon the expected efficiency savings, or a combination thereof. In any case, there would likely need to be a cap placed upon the amount of the credit on either a project or programmatic basis, or both.

c. **Loan Program**. Create an energy efficiency loan program to offer low-interest or no-interest loans for large capital expenditures intended to reduce energy consumption, and thereby make possible projects that may otherwise be economically infeasible.

d. **Environmental permitting incentives.** Provide fast track permitting for retrofit and/or equipment replacement projects that would otherwise proceed on a traditional permitting path, if the equipment will result in energy efficiency or conservation savings. Examples might include the expanded use of commence construction waivers, expanded application of RCP and ROP permitting for sources above 25 TPY actual emissions, and exemptions from construction

permitting at true minor sources. Emphasis should be given to providing permitting incentives on a project basis.

8. **Timetables, Duration and Stringency Option:** Implementation of incentive policies is dependant upon legislative approval, and the availability of state revenue. Under a very optimistic scenario, legislation could be passed in the 2009 legislative session and funding appropriated for the fiscal year beginning July 1, 2009. To maximize effectiveness, the incentives should be considered as continuous ongoing appropriations.
9. **Explanation of Rough Estimate of GHG Reductions:** The estimated energy savings of 5% below baseline levels represents an estimate of what can occur given that many industrial energy users have already undertaken energy conservation and efficiency measures that were driven by the rising cost of energy.
10. **Rough Estimate of Costs for Selected Years:** To maximize the attractiveness and energy-saving potential of the incentives, and to provide a broad spectrum of incentives available to meet the need of small, medium and large companies, a funding level in the range of at least $15 million per year should be considered.
11. **Barriers to Implementation:** The incentives would require legislative approval, including the appropriation of state revenue during a time when the budget is tight. There would also need to be an administrative component to each of these incentives, including, in some cases, the likelihood of a competitive application process or the certification of tax credits. Also, as noted above, the incremental benefit of energy efficiency and conservation is uncertain given that lean

manufacturing and other market-driven forces have caused many industrial sector businesses to implement energy efficiency and conservation measures already.

12. **Other Factors:**

Wisconsin Global Warming Task Force
Industry Workgroup
Policy Option: Industrial Boiler Fuel Switching

1. **Workgroup**: Industry

2. **Policy Name**: Switching fuels used in industrial boilers to lower greenhouse gas emitting fuels or to carbon-neutral fuels (biomass/renewables)

3. **Policy Type**: [Incentives][Mandates][Incentives and/or mandates] for industry to switch to lower greenhouse gas emitting fuels in boilers used for on-site power/steam generation

4. **Affected Sectors, Sub-Sectors and/or Entities**: Industrial facilities, primarily in the pulp and paper industry

5. **Estimated Greenhouse Gas Emissions Reduction Potential**: The following are very rough, ballpark estimates of the general magnitude of reductions that might be expected with 100% implementation of each option.

    a) Convert fossil fuel boilers to biomass/renewables: Based on a rough estimate in the pulp and paper industry, the maximum statewide reduction might be in the vicinity of 50% from 2005 levels, or approximately 5 million tons.
    b) Convert coal-fired boilers to natural gas: Based on a rough estimate in the pulp and paper industry, the maximum statewide reduction might be in the vicinity of 18% from 2005 levels, or approximately 1.8 million tons.

6. **Estimated Costs**: The following are very rough, ballpark estimates of the general magnitude of costs that might be expected with 100% implementation of each option.

    a) Convert fossil fuel boilers to biomass/renewables: Based on a rough estimate in the pulp and paper industry, the capital costs for boiler conversions alone might be expected to approach $2 billion. The capital costs for related facility changes and pollution controls are unknown, but could approach $2 billion, based on anecdotal evidence. Capital costs need to be scaled to actual energy use. Operation costs could increase or decrease, depending on site-specific conditions.

b) Convert coal-fired boilers to natural gas: Capital costs are unknown, but would be substantial. Energy operation costs could be expected to increase by a factor of about 3.5, based on the average annual price differential between coal and natural gas in 2005 as reported in Wisconsin Energy Statistics 2006.

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

a) Incentives: Provide [cash grants] [refundable tax credits] [low interest loans] [expedited government approvals] [fuel cost subsidies] [property tax incentives] [other?]
b) Mandates: Establish enforceable emission limitations equal to the emissions associated with the preferred fuel.

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

a) Incentives: It would likely take a couple of years to put incentives into place. It would then likely take several more years before companies began to utilize the incentives and make related boiler changes.
b) Mandates: It would likely take several years to put mandates into place. Once in place, a three-year compliance period is typical. However, a longer compliance period may be warranted in order to allow infrastructure needs to catch up (e.g., boiler availability, raw material availability). Mandates would be a much more stringent option than incentives.

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

a) Convert fossil fuel boilers to biomass/renewables: Total industry sector CO2 emissions in 2005 were approximately 10 million tons (DNR AEI). Pulp and paper industry is almost 70% of total, or somewhat under 7 million tons. About 70% of pulp and paper CO2 emissions are associated with fossil fuel combustion, or a little under 5 million tons. Assume more reductions if extrapolated to all industry. Assume less reduction due to a boiler size limit below which conversion would not be required. Assume the increases and decreases offset, resulting in an approximate 5 million ton maximum reduction potential.
b) Convert coal-fired boilers to natural gas: Approximately 55%, or about 3.8 million tons, of pulp and paper CO2 emissions in 2005 associated with coal combustion. Assume natural gas emissions are 59% of coal emissions, adjusted for efficiency. Paper industry maximum potential reduction of approximately 1.6 million tons. Extrapolate to all industry, but assume few coal-fired boilers outside

of pulp and paper, resulting in approximately 1.8 million ton maximum reduction potential.

10. **Explanation of Rough Estimate of Costs**:

a) Convert fossil fuel boilers to biomass/renewables: There were 83 pulp and paper industry boilers listed in the 2005 DNR AEI. Assume 15 boiler replacements at $33 million and 45 boiler rebuilds at $23 million. Total pulp and paper costs would exceed $1.5 billion. Extrapolate to all industry and costs could be expected to approach $2 billion. Costs are in 2001 dollars, so actual costs would be higher. Costs are for a model facility based on steam demand, so costs must be scaled to actual steam demand. Costs are for boiler replacement only. The capital costs for related facility changes and pollution controls are unknown, but could approach $2 billion, based on anecdotal evidence.

b) Convert coal-fired boilers to natural gas: See 6.b.

11. **Barriers to Implementation**:

- Compliance costs, economic impacts
- Availability of alternative fuel (biomass/renewables)
- Raw material cost increases for bio-based industries due to demand for biomass as fuel
- Feasibility of getting biomass/renewable fuels to all parts of the state (truckloads of wood/wood waste versus natural gas pipeline)
- State government costs for incentives

Governor's Task Force on Global Warming
Industry Work Group
Date: Wednesday, October 3, 2007, 9:00 am – 12:00 noon
Location: room 413, GEF 2,
101 South Webster St., Madison

Meeting Notes

Attendance:

Caryl Terrell	Nick Sayen
Steve Steinpreis	David Oughton
Ed Wilusz	Eric Callisto
Satya Rhodes-Conway	Doug Drake
Joe Muehlbach	Tom Karman
Scott Manley	Clare Stapleton-Concord
Roy Thilly	Marc Bentley
John Imes	Ralph Paterson

+ Scott Johnson, Dave Stringham and John Larsen (via conference call)

I. There were no open meetings issues or questions. More timely postings to the website requested.

II. Discussion of Wisconsin Industry Emissions data

John Larsen began the conversation by giving a review of the strengths/caveats/weaknesses of the WRI inventory.
Ed Wilusz explained the questions/issues he raised last week.
John Larsen spoke to these, and then allowed DNR personnel to contribute.
Ralph Paterson spoke about the specifics of the WI DNR Air Emission Inventory.
Tom Karman discussed possible alternative ways of calculating WI CO2 emissions in ways that captured more info than the WI DNR Air Emission Inventory.
Scott Manley added questions/comments.
Roy Thilly added thoughts and comments regarding the relative goals of the Task Force and Industry Work Group and the status/importance/role of the data in those goals.
It was decided to involve the TAG in this conversation – an attempt to integrate a conf. call into the 10/4 TAG meeting will be made.
Some consensus was reached on work that DNR could do to 'verify'/ 'compare' WRI data – understanding of that work will be double checked by DNR personnel with Scott M., Ed W. and the co-chairs.
A timeline for establishing/resolving data issues will be determined.

III. There was no discussion/review of policy templates presented last week.

IV. Presentation by remaining Subgroups on their rough policy template, including committee discussion and identification of data needs.

Clare Stapleton-Concord presented her draft policy template on outreach to business regarding CO2 emissions. Satya Rhodes-Conway presented her related template on workforce development.
Ed Wilusz presented his draft policy template on boiler fuel switching.
Satya Rhodes-Conway discussed her template on combined heat and power (CHP).
Ed Wilusz added a possible contribution/parallel to this template.
John Imes agreed to write up a feebates template.

V. Materials from John Nicol were pointed out on the WG website and Members were encourage to review and asked to submit questions/direction for John Nicol's presentation next week.

VI. It was suggested that the group try to meet earlier on October 9th to work on the policy templates. Availability of the room is being checked. Potential for meeting on October 12th was discussed.