

GREEN CHEMISTRY SUPPORT ROUNDTABLE
Constitution Hall, Lansing
Thursday, May 22, 2008, 9:00 a.m. – 12:00 noon

Members in attendance: Patricia Beattie, Clinton Boyd, David Browning, Tracey Easthope, Sarah Green, Michael Hales, Rebecca Head, Jerry Howell, Yinlun Huang, Dalila Kovacs, Martha Stanbury, Andrew Such, Guy Williams, Gabe Wing

DEQ staff in attendance: Frank Ruswick, Amy Butler, Marcia Horan, Robert Jackson, Karen Edlin, Kim Griswold.

Guests: Joel Tickner and Yve Torrie, Lowell Center for Sustainable Production; Charlie Bauer, DEQ Saginaw District, Water Bureau.

9:00 – 9:10 a.m. ~ Welcome

Frank Ruswick, Senior Policy Advisor, DEQ

Discussion:

- Roundtable's mission and authority (Executive Directive 2007-22)
- Summarize scope of the Green Chemistry Support Program.
- Bases for developing draft Green Chemistry Action Plan.
- Clarify recommendations and identify actionable items within Action Plan.

Conclusion:

Action Items:

- DEQ will post meeting summary on the DEQ's green chemistry website by mid June.

9:10 – 9:30 a.m. ~ Introductions

All

Discussion:

- Roundtable members interest, affiliation, and representation.

Comments:

- Rebecca Head will also represent the Michigan Association of Local Public Health

Conclusion:

Action Items:

- Roundtable members (present and absent) should confirm contact information as soon as possible.

9:30 – 9:45 a.m. ~ Roundtable Charter and Operations

Frank Ruswick, Senior Policy Advisor, DEQ

Discussion:

- Reviewed draft Green Chemistry Support Roundtable Charter dated 5/21/08.

Comments:

- Charter currently draft format, looking to clarify expectations.
- Support program equals 4 bullets under Charge & Scope heading.

- Envision subgroups which may include individuals from outside the Roundtable.
- DEQ's preference is to work on the basis of consensus; however if not possible, we will recognize differences. This is a non voting group, not done on majority/minority – this aspect will need to be added to Charter.
- Outcome/vision – That Michigan (MI) becomes green chemistry leader nationally and green chemistry is common practice; perhaps expand bullet 1 under Charge & Scope heading to cover this.
- Need to add objective vision.
- Identify what program will look like in five years.
- Keep in mind this is an advisory group – possibly embellish on bullet 3 under Charge & Scope heading.

Conclusion:

- A vision statement will be added to the charter that envisions MI as leader in green chemistry and describes what the program will look like in five years.

Action Items:

Add to Charter:

- 1) Roundtable operating on consensus
- 2) Vision: Michigan as a leader in green chemistry
- 4) Potential for alternatives when member absent

9:45 – 10:30 a.m. ~ Stakeholder Survey

Yve Torrie and Joel Tickner, Lowell Center for Sustainable Production

Discussion:

- Viewed Lowell Center for Sustainable Production PowerPoint.
 - Methodology - interviewed many leaders in nation, including 12 in MI.
 - Kept hearing:
 - Need database, award, center, conference, vision, funding
 - Need to work with others – MEDC, associations, colleges
 - Need to be leader
 - Action Plan divided into three development phases, but need to be looking at initiating all phases now.
 - Need additional comments from Roundtable.
- Phase I – Building Awareness (1-12 months)
- Resource base might include Green Chemistry Education Network node set up in MI.
 - Any branding would have to have objectives (i.e. nontoxic) and measurement/metrics (i.e. number of new green chemistry courses/graduates).
- Phase II – Building the Program (12-36 months)
- Hold a conference to showcase green chemistry; could be hands on/interactive, provide demonstrations by industry; could be building block to green chemistry base in MI. Would need clear objectives and clear outcomes.
 - Award program should be broader than federal program; could be self nominating, include an academic/education reform component and community reform in services.
 - Long term projects could build off resources identified in database/clearinghouse, need to look at how to work with MEDC on growth areas and ask professional organizations to partner on long term projects.
- Phase III – Building the Future (3-5 years)
- Develop opportunities in education: green chemistry not well understood; K-12 need curriculum changes; look for ways that universities can work together instead of competing for funding. Possible action could include ½ day symposiums to show what is going on (i.e. at college level this could be a series of green chemistry education forums that would move around state).
 - Develop new innovative technologies; may be identified through resource

database/clearinghouse. Growth areas need to be identified and developed (i.e. biomass conversion, ethanol plants that are able to produce additional products).

- Establish a center; place to come/visit if you are seeking solutions, a clearing house on assistance/knowledge, would provide for long term need but uncertain where this could/should be housed; perhaps where educational opportunities exist.
- Questions:
 - Were examples and ideas provided during the interview process captured? A summary of interview items will be posted on Web and today's examples were taken directly from the Action Plan.
 - Have comments previously sent to the DEQ been incorporated into the Action Plan? Comments have not yet been integrated but will be once everyone has had the chance to comment.
 - Will the Action Plan be adopted by the DEQ? Is the Action Plan for advancement or will the Roundtable provide advice? The DEQ will adopt the Action Plan but will look to the Roundtable for advice/guidance/input.
 - What about input from National Chemistry Council (or maybe input from other groups)? Could they come in to talk about what is going on in the area of green chemistry (i.e. Responsible Care)? Suggest presentations be made prior to the Action Plan being adopted.
 - The definition of green chemistry the Roundtable should be working with is the one from ED 2007-22? – Yes
 - Do we need to come to a consensus on the Action Plan?
 - What is the timeline for adopting the Action Plan? We need to get process started – possible two-step process (see Wrap Up).

Conclusion:

- Additional comments on the Action Plan are needed.
- The Action Plan is evolving; DEQ views it as a living document, thus changes may be made as we move forward. If change is an issue, the Roundtable could make suggestions to DEQ that changes be made.
- Don't believe Action Plan should be perfect, if roundtable is advisory in nature and document is actually DEQ's; thus, roundtable shouldn't be concerned about every issue.
- With respect to finalizing the Action Plan, Roundtable will not meet specifically to discuss a final Action Plan. Future exchange on this document will be via email only.

Action Items:

- 1) Post Lowell Center's 18 page summary of interviews to DEQ Web site.
- 2) Need comments by 6/13/08 on Draft Action Plan
- 3) Distribute Action Plan with comments (any changes to be strike/highlight) to Roundtable by 6/20/08, with document going to Director by the end of June 2008.

10:30 – 10:45 a.m. ~ Break

10:45 – 11:45 a.m. ~ Green Chemistry Action Plan

DEQ

Discussion:

- Not editing document or comments at this time, looking to capture additional comments from the Roundtable.

GENERAL COMMENTS:

- Are there key areas missing from timeline or is the timeline too aggressive?
- Timeline is good but it is not clear, from the way it is written, that an overlap is needed (need variable starting points).
- Not too aggressive but funding aspect may not be accurate – suggest concepts be

listed by priority, so that if a subgroup isn't able to undertake all items that critical issues aren't missed.

- Need more university involvement, best to engage now not later – Roundtable should seek to keep all involved/informed to better facilitate future partnerships.
- For industry to take part in green chemistry, Roundtable needs to transfer language into business terms. Other key items important to industry: toolbox with tool kit; standardized lists so that everyone is on a level playing field.
- Seems like education and business are addressed separately in the Action Plan, the Roundtable needs to find bridging opportunities.
- Concern that green chemistry concepts appear a push to consumers, not the reverse; thus, how does the Roundtable create structure to provide incentives for businesses to want to make change.
- Action Plan must better reflect that activities need to start early.
- It's important to have early success – two things, might be an awards program and the resource hub (capturing activities in MI); believe this would help Roundtable move forward.
- Roundtable doesn't need to reinvent the wheel – where applicable we need to build on what others are doing.
- Need to remember that a lot of current movement around green chemistry is on pharmaceuticals – the Roundtable needs to be much more than this, but we could learn from their successes/methodologies.
- What about sustainable/green engineering taking place in MI?

PHASE I – BUILDING AWARENESS (1-12 months)

Define parameters of Support Program:

- Is it useful to try to put boundaries around what this program will be?
- Believe this Action Item will drive the other items.
- Much discussion around the idea of life cycle costs (product use vs. design); appear to be two different trains of thought. Green Chemistry is about hazards reduction – not management. The areas of thought on page 7 are to general – everything is a tradeoff.
- Jurisdiction; what should be Roundtables focus, there are other forums for energy efficiency discussions, we need to harness creativity to design safer chemicals. A few guiding principles would help us address questions like these now and in the future.
- ED 2007-22 provides for a definition of green chemistry and 12 principles are clear about production and give us scope. Given that, one question could be how many principles must be met to be considered green.
- Green chemistry seems to have a narrower view (see directly above), but sustainable chemistry would look at bigger picture and include energy efficiency.
- Green chemistry = benign by design; products are all valuable but how can we make/design them safer/better.

Build a Resource Database:

- Framework available (see page 12), should use databases already started.
- Green chemistry map available from University of Oregon (only four MI people currently listed in this database)
- Roundtable should look to build similar resources and have links there.

Create Green Chemistry Brand:

- Not clear on what branding means (i.e. product/movement/approach to chemicals movement).
- Any concrete movement forward would begin to show our brand.
- Branding should refer to a face/identity, not about a stamp on products.
- Look to possibly align with Pure Michigan branding – way to save resources, but would need to differentiate from travel.

PHASE II – BUILDING THE PROGRAM (12-36 months)

Hold Green Chemistry Conference:

- Awards announced at conference.
- Need something for folks to feed into after the event – someone may be new to the subject; what do they do after learning about green chemistry; how do they continue to interact with the group/concept.

Develop Annual Green Chemistry Award:

- Would increase buzz.

Set Groundwork for Long Term Efforts:

- Need benchmarks; which events happen when and what would be outcomes.
- Clearing house should be first, immediate step (i.e. environmental law association may want to help us do a conference – this is way to find partners); lobbyists, academia, business, environmental all doing things – roundtable should look to fill the gap.
- Need blog/listserv to share ideas.
- Need strong economic piece; component to jumpstart green chemistry.
- Need to keep an eye on sustainability groups – they are really beginning to focus on chemicals.

PHASE III – BUILDING THE FUTURE (3-5 years)

Establish Opportunities in Education:

- How can we further green chemistry in students? Companies want to hire well educated employees, they will train them. Students are getting hands-on green chemistry training.
- One area of focus should be educating the general public.
- Green chemistry programs might grow if students knew there were jobs available upon graduation.
- What might help is, placing co-ops/interns into chemical companies to do projects on green chemistry; students might be responsible to report back to the Roundtable; students get to know green chemistry principles, industry gets project done and may very well hire the student. Maybe a kitty (½ funds industry/state) could be established to get this kind of thing off the ground.
- Need to focus on two year programs too – managers, lab technicians, plant operators, etc.
- Material scientists and formulators need to be taught green chemistry.

Implement Innovative Technology:

Establish Green Chemistry Innovation Center:

- Need place for companies to share information/questions on how to change – industry has a need for new ideas too. A place where they can say “we need help with ‘x’,” this would provide an opportunity for others to weigh in on an issue and provide help to industry. Innovations typically come from outside ones inner circle.
- With respect to establishing a Center, good idea but need to build on what is already out there and important to remember green chemistry should be an approach not an ownership issue.
- West Michigan is beginning a green chemistry forum.

Conclusion:

- 1) Need baseline database (clearinghouse) – will help us with bounding, possibly a topic for a subgroup.
- 2) Need conference/awards program.
- 3) Need academics to begin talking with each other – network them together.
- 4) Need problem solving resource for industry:
 - Jobs exchange resource

- Toolbox – difficult, may be best as a long term vision
- 5) Need to determine how funding issue will be resolved.
- 6) Need better timeline with actions prioritized.

Action Items:

- Set up RSS Feed to share green chemistry information
- Action Plan need clear timeline/priorities
- Action Plan (page 13), need to change \$10 M to \$100 M

11:45 – 12:00 noon ~ Wrap Up

Discussion:

- Need to encapsulate these ideas in Action Plan (have structural format underway)

Implementation:

- Two tracks- multiple ways to look at (two subgroups)
- Funding needs to be part of both – DEQ can't fund long term.
- Track 1: Understanding current baseline (define RFP for contract), setting boundaries, establishing networks and resource opportunities, undertaking metrics (how do we evaluate moving forward).
- Track 2: Conference and Award effort (may be vehicle for biggest impact).
- Meetings will be summarized and posted to Web.

Conclusion:

- Two subgroups – need to describe tasks and what resources will be needed to undertake.
- DEQ staff to put together charge – what we hope to accomplish, where energy will be focused.
- Roundtable members need to confirm contact information at sign in desk – this will be the information used going forward.

Action Items:

- Post meeting summary to Web.
- Need to focus on charge for both groups (to include items above), want timeline attached.
- Roundtable members will assign themselves after charge comes out.
- By 6/13/08: Roundtable members will provide comments on this draft of the Action Plan.
- By 6/20/08: DEQ to send out final Action Plan by mid/late July 2008.
- Next meeting in two-three months – send out quick poll (i.e. meetingwizard.com) to Roundtable to find out best weeks in July/August 2008. At latest early September if work is underway.
- Subgroup charges and meeting dates critical to get out.