

GREEN CHEMISTRY STAKEHOLDER MEETING

Brainstorm: Areas That Promise Quick Successes

To facilitate a discussion on how the DEQ should proceed with implementing Governor Jennifer M. Granholm's Executive Directive No. 2006-6, "Promotion of Green Chemistry for Sustainable Economic Development and Protection of Public Health", stakeholders were asked the following four (4) questions. Underneath each question are the expressed comments of the stakeholders.

- 1. Considering the content and goals of Michigan's Green Chemistry Executive Directive, what three areas within the Green Chemistry Support Program should be prioritized over the short-term (next twelve months) and long-term (three to five years)?***

General Comment: The responsibilities of the Green Chemistry Support Program can be divided into two areas:

1. Research, development, and application of green chemistry; and
2. Education (K-12 and higher education).

Stakeholder Comments:

For research, development, and application of green chemistry the stakeholder felt:

- Michigan should do a better job telling its story and marketing itself as a place for Green Chemistry innovation. The message should be tailored to attract investors and high tech companies to come to "Michigan for Green Chemistry." For example, Michigan should explore opportunities for fostering investment in Green Chemistry research and commercialization of technologies.
- Forge partnerships between state agencies and the legislature to advance Green Chemistry and renewable energy.
- Tailor incentives towards Green Chemistry.
- DEQ should conduct a Sector analysis of which chemicals of concern are impacting economic development. Narrow down this list to serve as a roadmap to create new markets and job retention.
- Once sectors with common problems have been identified, create sustainable business forums using the U. S. Environmental Protection Agency, Design for Environment Program as a model.
- There needs to be a clearinghouse for maintaining information on what industry is doing in the area of Green Chemistry.
- Multiple commonalities among groups of chemicals. Identify the areas of concern and areas that will drive the focus.
- DEQ should develop tools for chemical assessment to help small- and medium-size businesses.
- The Michigan Economic Develop Corporation has five growth areas, all with a Green Chemistry aspect.

- Use Green Chemistry resources to increase economic wealth; safeguard public health and the environment; and develop opportunities for communities that are over contaminated, underemployed, and have little or no skills.
- Strive for consensus on definition of Green Chemistry.

For education (K-12 and Higher Education) the stakeholders suggested:

- Assess what curriculum or education programs are in place for educating K-12 and higher education. Work on independent curricula that will fit in with the Michigan Education Assessment Program objectives.
- Include toxicology in chemistry programs, as currently companies need to train chemists in this area.
- Convene a group to work out the most innovative and smart conference in Green Chemistry.
- A conference is an opportunity to educate public health professionals on the connection between Green Chemistry and the benefits to public health.
- Green Chemistry awards for innovation should be part of the conference and should focus on multiple sectors.
- Serve as a clearinghouse for Green Chemistry conferences by providing criteria for a good conference.
- Provide a consistent message at conferences and within education.
- Develop a Web site to share and collect information, and increase visibility.
- Work off resources already developed by the Green Chemistry Institute and others.
- Find a way to reach the public and include them as participants.
- Provide grassroots education on Green Chemistry information and principles, such as “train the trainers” sessions.
- Beyond educating ourselves, what does the public want to know about chemicals? Provide information (grassroots level) to educate the public, such as:
 - News coverage about contaminated toys.
 - Would resources help that test toys?

2. Given your interests in furthering Green Chemistry in Michigan, what resources can you commit or identify to work in conjunction with the MDEQ in moving this program forward?

Stakeholder Comments:

- Everyone looks to industry for help; the caution for company support/money (specifically, chemical companies) is that industry likes to support specific things such as student interns to do specific task. Possibly, the Michigan Manufacturers Association and the Michigan Chamber of Commerce, and local Chambers could be approached for specific types of projects.
- Companies should give sweat equity.

- Michigan Technological University has great graduate students always looking for projects; often with National Science Foundation funding and other grants. Perhaps there would be similar opportunities with other universities.
- Consider utilizing the MDEQ, Retired Engineer Technical Assistance Program (RETAP), Technology Demonstration Program to stimulate research for Green Chemistry and technology commercialization. Grants are available for small technology demonstration projects; which consists of a couple of small projects done with universities to drive adoption of new and emerging technologies.
- Greater coordination among other state departments is needed to maximize existing funds and leverage money.
- Solicit grant support from foundations for economic interests, health department interests, ecosystem interest, over-contaminated and underemployed. Some foundations might be interested in matching funds and donating toward this.
- Package as a public/private partnership to access multiple foundations.
- Identify foundations that are most in-line with the project and approach multiple foundations.
- Partner with non-profit organizations or universities.

DEQ Comments:

- The DEQ received a one-time appropriation (\$1 million) in fiscal year 2007 for Green Chemistry projects. These funds can be used for research, commercialization of new technology, information gathering and clearinghouse functions. Stakeholders should forward their ideas to the DEQ for consideration. The funding cannot be used for DEQ staffing.

3. *Are there other key stakeholders from academia, industry, government, or the non-profit sector that should be invited into discussions about the program?*

Stakeholder Comments:

- Michigan Technological University (robust sustainability effort and graduate students seeking research opportunities)
- Michigan Agribusiness Association
- Farm Bureau
- Michigan Department of Transportation
- Michigan Department of Natural Resources
- American Chemical Society Green Chemistry Institute
- Paul Anastas and John Warner
- Energy sector
- Education (K-12)
- Michigan Department of Community Health
- Professional associations such as engineers, scientists, and etc.
- Finance Investment Services

DEQ Comments:

- The DEQ asked the Stakeholder's to forward any contact information they may have on the additional stakeholders so that they can be invited to future Green Chemistry Stakeholder meetings.

4. What would be the most effective format for discussions among stakeholders between meetings on the Green Chemistry Support Program (conference calls, a discussion forum, etc.)?

Stakeholder Comments:

- A combined Web-based presentation tool (Webex) and conference ability with an on-line forum for posting documents.
- In person meetings are good initially, and then use Webex.
- The Green Chemistry Support Roundtable (Roundtable) meetings to be made up of those that are willing and able to participate.
- Role for subcommittees first set up our road map (learn from lessons in California).
- Roundtable could have monthly conference calls and two annual meetings. Stakeholders could meet less often.
- Can set up a Web page for discussion groups, making it available to the public.

DEQ Comments:

- The DEQ will consider all recommendations made by the stakeholders and brief all interested parties on actions the department will take in implementing the Green Chemistry Executive Directive.