California Environmental Protection Agency
Department of Toxic Substances Control
Green Chemistry Initiative Science Advisory Panel
February 11, 2008 Meeting
Conference Call

Meeting Notes

Meeting Participants

- Dr. Paul Anastas
- Dr. Nicholas Ashford
- Dr. John Balmes
- Dr. Eric Beckman
- Dr. William Carroll
- Dr. Gail Charnley
- Dr. Richard Denison
- Dr. Daryl Ditz
- Dr. Michael Dourson
- Dr. Ken Geiser
- Dr. Lynn Goldman
- Dr. Robert Grubbs
- Dr. Neil Hawkins
- Dr. Mary O'Brien
- Dr. John Warner
- Dr. Michael Wilson
- Dr. Katy Wolf

- Anne Baker, DTSC
- Kathy Barwick, DTSC
- Don Owen, DTSC
- Jeff Wong, DTSC
- Emerson - facilitator

Meeting Objectives

- Approve 1/10/08 San Francisco meeting notes
- Listen to subcommittee progress reports
- Evaluate progress to date
- Confirm SAP path forward and next steps

Welcome and Introductions

- Dr. Warner welcomed participants and reviewed the agenda.
- Participants introduced themselves.
- Today's meeting agenda was reviewed; no revisions were made.
- Emerson reviewed the ground rules for today's meeting.

Review and Approval of January 10, 2008 Meeting Notes

Meeting notes from the January 10, 2008 SAP meeting were reviewed. No changes were requested and the notes were approved.

Subcommittee Reports

Subcommittees delivered brief reports on their activities to date.

- Subcommittee on Data Needs and Availability (Subcommittee 1): Dr. Richard Denison reported for the group:
    - Established a process to conduct its operations;

- As a starting point, the group is looking at a set of questions that need to be formulated to all SAP subcommittees: what kinds of questions/issues would be illuminated by more data?
- As a second step: the group will examine the options for generating or making those data available, including an assessment of existing data, data sources and their adequacy.
- Subcommittee 1 has posted on the SAP web work space an "ask" of the other subcommittees to get this feedback.

Discussion items included:

- It's important to link the data needs with Subcommittee 2's matrix.
- It's important to look not just at what data exist, but also how the data are organized, and whether they are accessible and useful. Are the data presented in a way that's comparable and available to use in alternative assessments?
- Who can access the data?
- The role of information technology systems.
- What kinds of uses exist for the data? Knowing this will help determine form and accessibility.

- Advancing Green Chemistry and Engineering Through Alternatives Assessment (Subcommittee 2). Dr. Nick Ashford reported for the group.
  - The need for the subcommittees to work closely together.
  - Issues around mandating alternatives assessment, with the New Jersey's and Massachusetts' programs as models.
  - What is the minimum data set needed for alternatives assessments? Need to provide that information to Subcommittee 1.
  - Need to link data to specific purpose(s), and a suggestion to develop a brief list of the problems that alternatives analyses are to address.
  - Note that technology alternatives analyses is an art form rather than solely formulaic; there are judgments involved.
  - The representation of various interests is important.
  - Good for Subcommittee 1 to know that there are various kinds of alternative assessments for various purposes (e.g., a retailer, versus a city such as San Francisco).
  - A request to place an issue on the "Parking Lot," regarding the motivation for performing alternative assessments. What process/procedure at the front end warrants an alternatives assessment?

  Discussion items included:
  - Interest in the process of performing alternatives assessment, as well as the criteria. Subcommittee 1 was asked whether they are working on the process of <u>how</u> alternatives assessments are performed.

- Advancing Green Chemistry Through Evaluation of Incentives and Barriers (SC3): Dr. Daryl Ditz reported for the group.
  - Subcommittee 3 has compiled options submitted by subcommittee members, in an options template. 15 options have been collected; these are posted on the SAP's work space. The purpose of collecting these options is to put the subcommittee

ideas on the table, to promote dialog on possible solutions. Not resolved yet is how to move the ideas forward.
    - Subcommittee 3 is also reviewing the DTSC Green Chemistry Options Report.
    - Subcommittee 3 will gather approximately 25 options, then ask the SAP to review and comment prior to whittling the list down.

  The discussion included a comment regarding the need to link the honing of recommendations into the SC6 process.

- Advancing Green Chemistry Through Education and Information Dissemination (Subcommittee 4). Dr. Ken Geiser reported for the group.
    - Subcommittee 4 encompasses a very broad area. The group is developing recommendations with various sections being developed by subcommittee members.
    - Dr. Geiser clarified that DTSC and Cal/EPA would like to include K-12 in the SAP's work on education, as well as higher education.
    - Looking at fellowships and internships to allow for green chemistry students to get industrial green chemistry experience.
    - Looking also at integrating green chemistry concepts into business schools.
    - Looking at the development of a "world class web-based information portal" for green chemistry solutions.
    - Evaluating the usefulness of the states' technical assistance programs for businesses, and to what degree green chemistry can be introduced (e.g., state extension programs).

- Advancing Green Chemistry Through Science and Technology (Subcommittee 5). Dr. Paul Anastas reported for the group. Discussion items included:
    - This group is working closely with subcommittee 4.
    - Looking at the following issues:
        - Ways to enhance the ability of universities and industry to work together on research projects? Need to remove impediments and make California a magnet for these partnerships
        - Best mechanism to identify a portfolio of green chemistry research challenges.
        - How to provide funding for the scientific research and technological development, and leveraging existing research funding.
        - Scientific tools; infrastructure; tools & equipment.
        - Extent of education/research fellowships, etc.
        - Excellence in scientific research and recognition of green chemistry accomplishments.
    - Recommendations will be generated and posted for comment.

  Discussion included:
        - A recommendation to expand the verbiage from "green chemistry" to "green chemistry and engineering."
        - Massachusetts and New Jersey both have state offices of technical assistance that are instrumental in improving environmental performance; a suggestion to include such programs in any recommendations.
        - Implications regarding intellectual property; will this subcommittee look at this? Answer: yes, that's part of the discussion.

- Synthesis Subcommittee (Subcommittee 6):
  Dr. Warner reported for the "synthesis committee."
    - Subcommittee 6 has had one conference call plus follow-up up work. Drs. Ashford and Denison have provided two framing alternatives ("structures") that have been distributed to the chairs of the five subcommittees for feedback.

Path Forward

SAP members noted that valuable tools are being developed in the subcommittees. These tools will help to integrate the subcommittee work into a unified product from the SAP.

DTSC staff gave a short overview of what is planned for the March 25 & 26 2008 meeting in San Francisco. The meeting will be largely a working meeting of the SAP. Discussion points included:

- The time in San Francisco should be used to address problematic issues.
- It will be good to have a briefing from DTSC on 3/25, but would prefer to have that today; we need this information sooner.
- Noted the tension between having subcommittees work separately and getting the entire SAP together. There is a need to balance the time.
- Suggestion that the SAP chairs ask subcommittees to elevate issues for discussion in the whole group.
- Some subcommittees might have clear links and therefore will want to meet together in San Francisco.
- We need to start with a clear picture of what we want to accomplish, and then work within the subcommittees to formulate how to get there.
- Start with a subcommittee 6 "needs assessment."
- Check in during the March 4, 2008 conference call on these issues. Devote time for discussion of the two proposed structures.
- Assign subcommittees the job of returning comment on the proposed structures to Subcommittee 6. OR—have subcommittee leaders report back on the next conf call.
- The subcommittee structure is very positive. Is it expected that subcommittees produce a written product?
- Some SAP members haven't joined a subcommittee; need to follow up with them.
- Discussion of the need to achieve consensus. The SAP was reminded that Director Gorsen has clarified that she is not requiring consensus, but would like the SAP to identify areas of agreement.
- Suggestion to define and highlight areas of agreement and disagreement.
- Dr. Warner clarified operational issues with respect to the SAP's final product and the role of Subcommittee 6 (the synthesis committee). Subcommittee 6 will:
    - Determine how to represent the areas of agreement and disagreement;
    - Determine the nature and form of the final product, and how it wants to receive information from subcommittees;
    - Evaluate ways to frame the subcommittee outputs in a way that is comparable across the subcommittees.

  It was noted that a written product from the subcommittees is expected.

Overview of Green Chemistry Initiative Current Status and Phase 2 Activities

At the request of SAP members, DTSC's Don Owen gave a brief overview of the current status of the GCI, and the next steps for the agency. Information included:

- Noting the work done by GCI agency staff to extract and articulate the 818 options identified in phase one and recorded in the options report.
- There will be a new round of stakeholder meetings designed to gather information about implementing the options, including issues about how, when, by whom, how funded, and timing. These meetings will be held over the next few months.
- On a concurrent track, agency staff is identifying key elements, including options characterized by a high degree of consensus. These items are not necessarily foundational, but are actions that can be done administratively within Cal/EPA. Internal teams will develop implementation work plans for these items.
- Draft frameworks for green chemistry will be formulated by early June 2008. Input about these frameworks will be gathered in five public workshops and the GCI website.
- By summer 2008, agency staff will prepare early drafts of possible legislative and administrative actions.
- A SAP member asked for clarification of the SAP operations relative to the work to be done in Phase 2 of the GCI:
    - GCI Phase 2 was clarified as an external process to get feedback from external parties about the recommendations. Agency staff will develop a final framework for people to react to. The SAP's role is to inform the agency regarding scientific and engineering issues related to green chemistry.

Next meeting

The next SAP meeting will be via conference call March 4, 2008 from 11 am to 1 pm PST/2 pm to 5 pm EST.

Parking Lot

A SAP member requested that the following issue be placed on the "parking lot" for resolution at a future time: Regarding the motivation for performing alternative assessments: what process/procedure at the front end warrants an alternatives assessment?

Adjournment

The meeting was adjourned at 11 am PST.