

APPENDIX C: FY 2007 MERIT REVIEW AND PEER EVALUATION MEETING: FEEDBACK AND RECOMMENDATIONS

These notes summarize the comments received from various participants at the May 15-18, 2007 Review:

Section 1: Comments received from Peer Reviewers during feedback sessions held immediately after each subprogram track was completed. The comments received were generally focused on the basic review process; however, where relevant, notes specific to a particular subprogram session are included.

Section 2: Scores and summarized answers to questions from the Review Questionnaire, filled out by approximately 61 of the participants.

Section 1 – Peer Reviewer Comments

General Review Comments

- The presenters did a good job.
- A few more minutes for the presentations would be good. Maybe 10 minutes more to cover more material - especially for those with media (videos and radio) - since those are the products we are evaluating.
- Suggestion: Have presenters share when and where products are/will be available.
- Twenty minutes is not enough time for many of the presentations the way they are given. Either thirty minutes needs to be allotted for each presentation, or keep the length at twenty minutes and force the presenters to focus on the point.
- Many of the presenters need to be taught how to present.
- Reviewers felt that they had been given early enough access to the presentations online before the week of the Annual Merit Review.
- Why are some projects presented as posters instead of oral presentations? It was explained that new projects that started only a few months ago are presented as posters.
- Suggestion: The Reviewer selection and assignment process should include having potential Reviewers check-off their areas of expertise as they pertain to the AMR, so that Reviewers will receive more appropriate project assignments.
- There needs to be some sort of attendance confirmation for the very last talks of the Review.
- The Kick-Off Meeting is redundant.
- Suggestion: Either shorten the poster sessions or hold them all on one to two nights.
- There were not enough guest rooms available at the hotel. Suggestion: Registrants must pre-pay for the hotel room when they register to help prevent people from backing out of attending at the last-minute, thereby minimizing disruptions to the review assignments.
- The Safety, Codes and Standards information in the Plenary Sessions was not of pertinence to everyone. However, other Reviewers disagree with this statement and feel that it is a useful and justified overview.
- Sessions ran on schedule and there was plenty of time for questions.
- Conflict in the timing of sessions of the three tracks made it difficult for participants to attend sessions in different tracks.

- May extend number of conference days next year or only review 50% of the program.
- Next conference to be held in June 2008. Many researchers attend 3 other meetings held around the same time so difficult to avoid conflicts.
- Reviewers should not be assigned only posters to review.
- Reviews for each reviewer should be spread out more evenly over the course of the meeting.
- Need a clear directive on the time frame for the accomplishments Reviewers are evaluating. There's uncertainty as to whether reviews should cover exclusively last year's accomplishments, or accomplishments of the project as a whole. Also, all of the speakers need to present in the same time frame – either last year or the entire project.
- It is unclear as to how much weight in the score should be given according to the work performed last year versus work performed in the entire project.
- It would be useful if general background of a project since its inception – a kind of historical perspective – was provided. This would be particularly useful for new and first time Reviewers to be able to put the project into perspective.
- It is good that foreign Reviewers are invited to participate in the Review – to keep the Review open and provide a broad perspective.
- The overall flow of the Review was improved. Fewer reviews per Reviewer was helpful.
- Comments from first year Reviewers:
 - Thought the Review would be chaotic; instead it was streamline.
 - Compared to other Reviews attended (outside of the Hydrogen Program), this one was much smoother.
 - Had a positive review experience.
 - The Kickoff Meeting: There is not tremendous value in hearing the same 20-minute talk each year. Suggestion: Have the TDMs speak to their Reviewers prior to the review to provide guidelines on how the projects should be evaluated (as oppose to the mechanics of how to fill out a form). This way, the Reviewers can evaluate according to the appropriate rules they are given.

Review Forms

- The evaluation forms were good.
- There is a bit of redundancy in the forms. For example, when the Reviewer reaches the “Recommendations” section at the end of the form, he or she has already given recommendations throughout the form.
- One reviewer did not like using Excel forms.
- Reviewer questioned why “Relevance” was on Evaluation Form. Answer: This section was originally intended to compare earmarked vs. non-earmarked projects. In the future, maybe just put “yes” or “no” with explanation if answer is “no.”
- The evaluation of partnering is practically pointless right now and preferably should be dropped. It is unclear why partnering is even a requirement that gets scored (people can do good work alone or within their institutional team).
- The Evaluation Forms are good for research and development type projects, but are not as well suited for Technology Validation projects. *Suggestion:* The Technology Validation evaluation forms would ideally focus more on the usefulness of the project to the public and to safety.
- Would like the opportunity to provide a subjective perspective on the value of the projects.

Education Review Session

- Reviewer Question: What kind of evaluation process is in place?
 - Facilitator Response: An evaluation process is planned and very important to our project. Preliminary deployments are being conducted and we are receiving ongoing feedback from teachers and students. As we move out into more schools, we are planning to incorporate evaluation mechanisms to aid future updates and improvements.
- Reviewer Question: Are website downloads tracked?
 - Facilitator Response: It is tracked, but not being looked at right now.
- Reviewer Question: How long does it take to train teachers?
 - Facilitator Response: Training a teacher with a good science and chemistry background can be as quick as 15 minutes. Teacher training workshops typically last 1 day but can be as short as 2 hours, depending on the time available.
- Reviewer Question: Can the teachers afford the kit on the \$200 income tax deduction?
 - Facilitator Response: The kits cost \$500 and have been designed for use over multiple years in multiple classrooms. Teachers who attend the workshops receive the kits free of charge.
- Reviewer Question: You seem to have covered the broad spectrum of the emergency response and hydrogen community in the review and outreach process, but as hydrogen is adopted in the widespread community, how will you deal with safety training of private security staff, university employees, etc?
 - Facilitator Response: You bring up a good point – we should begin to consider who else should be included in safety training. The course was designed to be widely accessible and we will consider how we can extend our outreach, especially in areas where demonstrations exist.
- Reviewer Suggestion: The Federal Aviation Agency has developed a system to track use of online training modules (time spent on each page, testing, other tracking mechanisms). You should consider looking at their system as a model for certifying course completion.
 - Facilitator Response: This is something we are considering for the future and we will take a look at this work.
- Reviewer Suggestion: At the EERE Info Center we get questions like, “We are putting in a hydrogen lab at a university, what do we need to know in terms of safety?” This course could fulfill the need to educate those who are installing hydrogen and fuel cell facilities by informing them about the essentials of hydrogen safety.
- Reviewer Question: Regarding the dichotomy of education, outreach, and messaging - on one hand we have all this language about how incredibly safe hydrogen is – how quickly hydrogen is dispersed, tanks are impenetrable, etc. On the other hand, we are always talking about fire fighters, emergency responders, and police in connection with hydrogen. How do we balance these two sides and ensure that the public doesn’t get the wrong impression?
 - Facilitator Response: This is something we have discussed and considered extensively, in terms of how and whether to raise the issue of safety. When we are addressing the general public we try not to bring it up unless someone asks a specific question. Compared to other emergency safety training courses that include lots of sensationalistic materials – such as flames, explosions, or blood - we have taken a different approach and created something more neutral, even though the flashy design approaches are what attract the attention of firefighters. We were also very conscious with the wording of the course material and take special care to be truthful but not alarming.

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- Reviewer Question: Is there a multi-year plan for how these various activities are going to contribute to the overall goals of the hydrogen program?
 - Facilitator Response: We have an MYPP for education which addresses the safety and codes target audience that is a large focus of the education activity. When collaboration with the Safety, Codes, and Standards Program Element began, we developed a high-level, multi-tiered plan to address the various education needs of this audience.
- Reviewer Question: You mentioned that there are variations in audiences across the country. Can you elaborate on this?
 - Facilitator Response: There are two components to this issue – we need to speak to different audiences in different voices but we also need to concentrate our communications where demonstrations exist and focus the message around a specific facility.
 - As an example, the first radio spot was fairly general and could be used by states where strong local initiatives for hydrogen and fuel cells have begun but facilities have not yet been installed. In contrast, the second spot is specifically about cars and will be deployed where stations and vehicle demonstrations are a visible entity in the local community.
- Reviewer Question: Will the podcasts be available for states to use and what is the process for states to incorporate them into their outreach materials?
 - Facilitator Response: We have just begun a concentrated effort to strengthen our relations and communications with state and local initiatives. As we finalize the podcasts, we will establish a protocol with our communications office to ensure that states will be able to use the podcasts and any of our other educational materials.
- Reviewer Question: Why do you emphasize how few fueling stations there are? If you start your messaging campaign with an idea of scarcity and smallness, as more and more stations are installed it will become difficult to change that messaging and change that mindset about hydrogen as a future technology.
 - Facilitator Response: We are very careful about overselling and we do not want to give anyone the impression that there will be a station somewhere where they will not see hydrogen and fuel cells for a while. We do not want to risk overselling the technology, especially on the vehicle side. As the market develops, so will our communications strategy and messaging.
- Suggestion: It would be helpful to have a special interactive review session where Reviewers can play around with some of the education products (school kits, media, online tutorials), similar to the special Analysis Reviewer session this year. They set up the various models on laptops for the reviewers to play around with and explore in depth.

Fuel Cell Review Session

- The Reviewers are forced to be too narrowly focused on the projects they are reviewing. Reviewing 12 projects is too much – there are so many other side meetings and aspects of the Review that a Reviewer reviewing so many does not have time to participate in these other areas of the Review and have time to fill out review forms. Reviewers with 6 to 7 reviews felt the work load was reasonable.
- Twelve-hour days are too long for the Review – there is no time for networking. *Suggestion:* It would be nice if, since the Review will be held for five days next year, the activities that have been held in four can be spread out to shorten the days.

- For projects ending in six months, it would be informative to still have the presentation, but is it really necessary to review such projects?
- There was too much membrane and catalyst information packed into two days.
- On reviewing membranes projects: it is difficult to review the approach of the project if the information on the project is confidential and therefore not presented. *Suggestion:* Perhaps alter the Evaluation Form for membrane projects to account for the fact that some aspects of the projects cannot be adequately reviewed.
- Why are non-precious metals catalysts NOT part of Basic Energy Sciences? That research seems more appropriate to BES.
- BES Presentations:
 - A Reviewer asked why the BES presentations were not on the Reviewer Information Website before the meeting. It was explained that the BES presentations were not on the website because they were not being reviewed. However, they are available on the CD-ROM all registered attendees receive.
 - A Reviewer noted that the BES presentations seemed to follow a different format or had a lack of uniform format. The Reviewers wondered whether the BES PI's were given a presentation template to follow.

Hydrogen Production and Delivery Review Session

- Good/outstanding projects presented.
- Presentations lacked enough technical data to review, sometimes for proprietary reasons. Sometimes data could not be accurately interpreted due to lack of information. Request/suggestion to include section on reviewer form called "data quality."
- Reviewer commented that she could not judge progress because she did not know state-of-the-art. Response: DOE has tables with current status and targets that can be provided ahead of time (for targets). Reviewer commented that slides needed to show annual progress and not report the same progress every year.
- Standardized format for presenters was useful, but need more latitude in format to provide more depth. More information came from questions at the end.
- Presenters need to clearly define paths to targets and clearly identify a critical path of how to get there.
- Did not see any "go/no go" or "off ramps" presented.
- Transition plans need to be provided. Future plans presented, but not marketing plans.
- Researchers should mention what other research is needed to advance their own – tell what problems need to be solved (i.e., materials issues).
- The print in the legends and figures in some of the presentations was too small.
- Value of the project should be indicated based on the scope of the project given the budget provided.
- Economic questions: Reports sound as if researchers are already on their way to targets; analysis should be more realistic. There is no indication of how R&D will achieve the economics they present. Institutionalization of H2A rules may help.
- Too many electrolysis projects presented.

Systems Analysis Review Session

- Good/outstanding projects presented.
- Two deployment models are not including safety as variables. Safety will be considered later and will increase capital costs.
- Consumer perception of safety will more greatly influence use of hydrogen vehicles than distances to fueling stations.
- Use of hydrogen in ICE will be used as a comparison for GHG emissions and fuel use – will be competed in some models as an option.
- Fuel purity – trying to understand trade-offs, need to understand cost model. Is there co-contamination?
- Several of the models have overlap – is there a good reason for this?
- End users need validation of models/predictions; need to make sure that H2A is on target first.
- Next steps:
 - Look at how gasoline will be reduced; refineries will have to change operations
 - Will gasoline be exported to China and India?
 - Possibility of reforming gasoline into hydrogen
- Shift to new technologies occur at 16-25% market penetration. Shift to hydrogen vehicles will not be for convenience – must be more value added (performance, “green,” fuel prices).
- In the MYPP, take credit for looking at market and technology barriers and putting them into perspective.
- Examine whether it is better to have demos before or after orals.
- Introduction to Analysis was good to show how presentations would fit together.

Storage Review Session

- A list of partners is provided on the first slide of presentations, but there is no indication as to how valuable the partners are or how much interaction there was in the work. How much work contributing to the project did they share? *Suggestion:* If presenters are required to list their partners, have them overview what the partners did and, just as important, what they did for the partners. Also, this is much more appropriate for the centers to discuss and not something for the project presenters to spend time on.
- Future plans are important but are generally blown off. In some cases, they are entirely missed. In others, future plans are given about 20 seconds and are vague and uninformative. *Suggestion:* We may need to accept that hardly anyone will time their talk, so leave an extra three minutes for plans after the presenter finishes.
- Some of the back-up slides in the project presentations should have been a part of the actual presentations.
- Solid state materials should be as important as wt.% and vol.
- Presentations should provide the project’s orientation to the program. A lot of presentations simply show the results; the approach to the target is also important.
- There has been a lot of progress in this area, but still need to work on ensuring that the presentations contain only the information Reviewers need to know. At times there were quite a few slides with extraneous information in a presentation that was already too long.
- If a slide is being shown that is the same as one used in the previous year(s), the presenter needs to be clear that he/she is showing a slide from before.

- The future work of some projects was given very specifically, while others were very vague. More detail on future work would be nice.
- *Suggestion:* There were a couple of presentations in which the slides each contained just one line with the point of the slide – how the project works towards the plan. This is helpful to the audience to know what the point is right away. Also a slide with just two to three lines explaining how the project supports the plan would be useful.
- The connection between the values of the project results and the program targets is not always clear. What is the novelty of this year’s results? Some slides are exactly the same as last year.
- The way some results were reported was “annoying” – or at least not very useful.
- Some of the presentations, while scientifically stimulating, were a bit ambiguous/unclear in terms of the point – Reviewers only have the presentations to rely on.
- Because scientists often tend to be very success-driven, there needs to be a clear way of saying “here we are in the project,” “here is where we need to be,” and “here is how/if we are going to reach that point.” At times, the presenters need to be more frank about where they are in their projects.
- There are some projects that need to have (or maybe show in their presentations) their relationship with the outside world.
- Center technical accomplishments should be restricted to progress toward goals. They can mention the projects that are making the progress, but they do not need to go into the technology. *Suggestion:* The Center presentations are management presentations and should be given as such. DOE should review and, if needed, help the Centers focus their presentations on management aspects.
- It is really nice having the Centers report to us in January, February, and March, and at the Merit Review in May; but a number of slides that were presented at FreedomCAR contained errors which were pointed out and then left unchanged for the Merit Review.
- In the Center of Excellence presentations, projects were described instead of the Center. Also, the Center presentations show enthusiasm, but they also show weak plans. *Suggestion:* Would like to see the coordination that takes place through the Center. Emphasis should be on collaboration between projects and evaluation criteria for projects.
- What are the Centers of Excellence decision-making criteria?

Technology Validation Review Session

- DOE targets were not emphasized in the Technology Validation presentations, nor do the Evaluation Forms capture that aspect. The presentations and Evaluation Forms should be modified to incorporate the DOE targets.
- Safety should be a required slide in all Technology Validation presentations, and tied into the Technical Targets/Goals.
- Other people, like UPS, are using fuel cells. That data would be useful to the DOE Hydrogen Program.

QUESTIONNAIRE

DEMOGRAPHIC QUESTIONS

1a. What was your role in the review?

Total responses: 61

14 Peer Reviewer (please answer questions in Sections A. and B.)

11 Presenter of a Project -- Oral or Poster (please answer questions in Sections A. and C.)

1 Presenter of Program Overview (please answer questions in Sections A. and C.)

35 Attendee, neither Reviewer nor Presenter (please answer questions in Section A. only)

1b. What is your affiliation?

0 Government agency directly sponsoring the program under review

16 National/government lab, private-sector or university researcher whose project is under review

16 In an industry directly involved in the program under review

6 In an industry with interest in the work under review

3 Government agency with interest in the work

11 National/government lab, private-sector or university researcher not being reviewed, but who has an interest in the work

5 Other (please specify, e.g., consultant, retired employee, public, etc.) _____

A. QUESTIONS 2 THROUGH 21 FOR ALL ATTENDEES

2.	Purpose and scope of the Hydrogen Program Review were well defined.	<i>disagree</i>					<i>agree</i>
		1	2	3	4	5	
							4.6
3.	The plenary presentations were helpful to understanding the direction of the Hydrogen Program.	<i>Disagree</i>					<i>agree</i>
		1	2	3	4	5	
							4.3
4.	Sub-program overviews were helpful to understanding the research objectives.	<i>disagree</i>					<i>agree</i>
		1	2	3	4	5	
							4.3
5.	The quality, breadth, and depth of the following were sufficient to contribute to a well-considered review:	<i>disagree</i>					<i>agree</i>
	a. Presentations	1	2	3	4	5	4.1
	b. Question & Answer periods	1	2	3	4	5	3.9
	c. Answers provided concerning programmatic questions	1	2	3	4	5	3.8
	d. Answers provided concerning technical questions	1	2	3	4	5	3.9
6.	Enough time was allocated for presentations.	<i>disagree</i>					<i>agree</i>
		1	2	3	4	5	
							4.2
7.	Time allowed for the Question & Answer period following the presentations was adequate for a rigorous exchange.	<i>disagree</i>					<i>agree</i>
		1	2	3	4	5	
							4.0
8.	The questions asked by reviewers were sufficiently rigorous and detailed.	<i>disagree</i>					<i>agree</i>
		1	2	3	4	5	
							3.8

- | | | | | |
|-----|--|-----------------|---|--------------|
| 9. | There were no problems with: | <i>disagree</i> | | <i>agree</i> |
| | 1. Groupings of projects by technical area | 1 | 2 | 3 |
| | 2. Proprietary data (should not be any at this Review) | 1 | 2 | 3 |
| | 3. Quantity/level of the information presented | 1 | 2 | 3 |
| | | 4 | 5 | 4.5 |
| | | 4 | 5 | 4.3 |
| | | 4 | 5 | 3.9 |
| 10. | The review was conducted smoothly. | <i>Disagree</i> | | <i>agree</i> |
| | | 1 | 2 | 3 |
| | | 4 | 5 | 4.5 |
| 11. | The frequency (once per year) of this formal review process for this Program is:
<u>5</u> about right
<u>0</u> too frequent
<u>1</u> not frequent enough
<u>0</u> don't know the frequency of reviews | | | |
| 12. | Logistics and amenities were satisfactory. | <i>Disagree</i> | | <i>agree</i> |
| | | 1 | 2 | 3 |
| | | 4 | 5 | 4.6 |
| 13. | The visual quality of the presentations was adequate. I was able to see all of the presentations I attended. | <i>disagree</i> | | <i>agree</i> |
| | | 1 | 2 | 3 |
| | | 4 | 5 | 4.0 |
| 14. | The audio quality of the presentations was adequate. I was able to hear all the presentations I attended. | <i>disagree</i> | | <i>agree</i> |
| | | 1 | 2 | 3 |
| | | 4 | 5 | 4.3 |
| 15. | The hotel accommodations were satisfactory. | <i>disagree</i> | | <i>agree</i> |
| | | 1 | 2 | 3 |
| | | 4 | 5 | 4.3 |
| 16. | The information about the Review and the hotel accommodations sent to me prior to the Review was adequate. | <i>Disagree</i> | | <i>agree</i> |
| | | 1 | 2 | 3 |
| | | 4 | 5 | 4.5 |
| 17. | What was the most useful part of the review process? | | | |
| | <ul style="list-style-type: none"> • The exchange of ideas from people with common interests in research. It lets the research community know if someone else is working on a similar area at least on the government-sponsored area of science. • Detailed talks by Directors and project leaders of the centers. The poster sessions were also of high quality. • Overview presentations • Obtaining feedback/guidance on the direction of the project. Chance to disseminate the learning quickly to a large number of stakeholders. • Know how research is going and how tax money has been spent worthfully. • Gave a pretty good idea of overall program directions. • presentations • Oral and poster presentations. • Peer interactions, discussions at poster session. Very helpful to review presentations before review. • Presentational CD • To experience all the "parts" of H2 program and how they fit together. • Questions by reviewers. | | | |

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- Seeing all of the funded projects and what others are doing.
 - One-on-one communications.
 - Oral presentations.
 - Hearing technical progress with respect to targets. Q&A period. (I have followed the storage part.)
 - Informal gatherings (e.g. lunch, breaks, and poster sessions. Presentations on disk.
 - Information and progress status obtained through the review process. Interaction with other research groups.
 - Getting an overview of all hydrogen storage techniques and potential problems associated with each one.
 - Access to project managers and research staff during breaks. Useful to have an update on progress.
 - Meeting program managers and colleagues, networking and coming up to date with the program direction and thrust.
 - Seeing the progress that has been made during the past year; keeping in touch with other researchers.
 - Getting a broad overview of the goals of the DOE's Hydrogen program and future agenda.
 - Consistent format for presentations. Focus on results and progress toward goals. Good framing of overall program.
 - Technology validation and FC part.
 - Having all projects under a subtopic together.
 - I can grasp the whole (concepts, materials to tech validations) information.
 - Presentations/Question, answer sessions.
 - Q&A after presentations were technical exchange and "brainstorming" occurred.
 - The actual presentations, poster board presentations.
 - Overview at start of each section.
 - Keeping the posters at the hotel is a good idea. It keeps people around. However, you need larger rooms to accommodate all the attendees during the poster sessions.
 - To have the presentation slides before the meetings on a CD ROM
 - Basic Energy Science Session.
 - Ample breaks, meals, etc. allowed plenty of time for offline discussions and info sharing.
 - 1. Reviews - Technical information on project progress, etc. 2. Poster Sessions - new ideas and activities. 3. Opportunity and ability to discuss with project PI's and others present during the week.
 - Get a clear picture of the progress. FC session was very informative. Technology Demonstration was the best.
 - Networking and Plenary Addresses and SOME Presentations.
 - 1. Direct communication with hydrogen researchers and analysts. 2. Useful information on progress of the overall program from all parts of DOE dealing with hydrogen.
18. What could have been done better?
- Some of the plenary slides had way too much information requiring small fonts.
 - Earlier poster sessions - even at the expense of lecture sessions.
 - Very little.
 - Need to use the opportunity to have tutorial session. There are still many misunderstandings on targets vs. research work. This is an excellent forum to cross-train a diverse group.
 - Extend by one day and shorten days to allow chance for better networking/informal meetings.
 - The projects with poor performance or did not have chance to meet the objectives could be

- removed rather funding them for multiple years.
- Some of the presentations had small fonts. Could not be seen from the back: larger fonts would have helped. More parallel sessions with a more focused theme.
 - It's very important to have person asking question stand while asking question. As a presenter, I could sometimes not determine who was asking a question or where they were located.
 - Presenters could have discussed figures to a greater degree, specifying units on axes.
 - Preview presentation and poster on CD before coming in so that the review process is more efficient and effective.
 - As a poster presenter, some reviewers just walked by, while others made a conscious effort to engage presenter in discussion to understand project.
 - It's just fine.
 - When presenting, I could not hear the questions. I saw that others had the same issue. The speakers were towards the audience, so presenters had a hard time hearing the questions.
 - Presenters had difficulty hearing questions from the audience. Noise from refreshment area was a major problem. No one closed doors so audience could hear the presenters.
 - Less formal presentations. Not all presentations needed 30 minute slots.
 - Need food at morning break - granola bars, fruit. 8am to 8pm is too intense.
 - I wish to commend the organizers of the review exercise. I find it an extremely useful event and a model for other programs/areas. Perhaps a wrapping-up session where project leaders would comment on the projects for success within the remaining time period.
 - Graphs and letters of some presentations should be made more clear. Interaction with other research groups.
 - Sound quality was poor - too much reverberation in the sound system.
 - Quality of reviewers could be improved and make sure these folks don't have a bias toward certain technologies and no conflict of interest - hidden or real.
 - The slide templates were better last year - many presentations got into so much detail that the purpose of the project was lost.
 - I find it hard to believe that reviewers and others gain enough insight from a 20 minute presentation to adequately evaluate a project. Some program managers scheduled separate briefings to provide more detail. This was extremely helpful.
 - Presentations were hard to see due to the font size used at times. A standard presentation format that would use a font size and color coordination to allow for it to be easier to read.
 - Sound system was "muddy." Also people asked questions without using microphones.
 - More time for presenters and for completion of review forms.
 - Time for presentation was quite limited. For better understanding, it is helpful to distribute presentation files prior to the Review/ (Say a week before?)
 - Minimum font sizes for presentations. Many used small fonts.
 - Fewer side meetings. (I know it is hard!) Many of the slides have too much text or data and it was hard to see small text. The frequency of the review is about right, but it is getting large!
 - Should not allow people to speak on their cell phones during the review - very disruptive and distracting.
 - Many participants use laptop to take notes or follow the presentations, but the rooms lack electric plugs/power.
 - Larger men's room - less crowding at breaks. (staggered breaks between A/B/C would have alleviated problem.
 - The biggest problem is that on Friday, most attendees are gone. Suggest that you start the plenary at 8:00 and end at 9:30. Start sessions at 10:00 on Tuesday; end each day by 6pm. If you do that, all Friday presentations would be done by Thursday Evening. Consider a 6-8pm reception on Monday evening to register most people and then you would be able to start the

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- plenary on Tuesday at 8:00
 - Side meeting in Madison room - doorknob broken. Modeling efforts (SA) should have longer time slots.
 - To have also the presentation slides of BES programs.
 - 1. More presentations from industry. 2. Too much confidentiality in Technology Validation.
 - Should provide tables for poster sessions to hold handouts, drinks, computer monitors to show slides or videos, etc.
 - Well organized.
 - Better audio systems.
 - Choose better projects (higher quality projects). Some of the system analysts (e.g. PTP and TIAX were NOT relevant and overly optimistic (almost to fulfill a political agenda). Battelle work, however, was very solid and realistic.
 - Limited amount of time to convey extensive and complex information on many projects can be frustrating.
 - Does this time and effort make a difference?
19. Overall, how satisfied are you with the review process? 1 2 3 4 5
4.3
20. Would you recommend this review process to others and should it be applied to other DOE programs? O yes **56** O no **0**
21. Please provide comments and recommendations on the overall review process.
- none
 - Very informative re state-of-the-art and progress toward hydrogen utilization. I don't feel the H2 approach can be sold on economics, but must depend on global warming issues - this should probably be addressed more thoroughly.
 - DOE is not using the opportunity to cross-train a diverse group of researchers for example, the molecular storage folks miss the practical issues facing the validation program or vice-versa.
 - Perhaps reviews should see presentation prior to meeting (don't know if this is the case now). Be aware of conflicts of interest from peer reviewers e.g. competition reviewing project will not be objective.
 - Accountability should be judged for continuous funding supports. The projects without delivery should be removed. 5 year guarantee policy is not in the best interest of taxpayers.
 - Overall it's a very useful review process. It would help to have more focused and smaller group. Hotel facilities were excellent. Food was good. Poster sessions should have been a little longer.
 - Review of the posters was greatly enhanced by one on one discussions.
 - 1. Session should be marked on the badge. 2. Select good presentation to discuss among different sessions.
 - I think this review process is essential to keep the focus on whatever goals/objectives a funded project must meet. Otherwise it is easy to go in the wrong direction especially over a year's time period.
 - Some members of the audience used Q&A period to enhance their personal opinions rather than to comment or obtain an answer.
 - none
 - Great process will recommend to people.
 - Meeting is too early for people not staying in the hotel. 9:00am - 4:00pm is more adequate.

- The ability to access the presenter's slides on the CD before the presentation and afterward when the reviews are being written is a real positive. It saves time in identifying key issues for discussions.
- It will be useful to attendees if presenters provide a 2 page extended abstract of their work/results beforehand with registration materials.
- Good technical review cannot occur in most of the areas covered in 30 minutes. But, it is very important and worthwhile to bring the researchers together. To foster greater information sharing, I would like to see a slide on lessons learned (some had this) and one on critical gaps - that is, "over the past year our research has shown that is critical for the development of the hydrogen economy.
- Presentations need a set format. Otherwise everything was fine.

B. QUESTIONS 22 THROUGH 32 FOR PEER REVIEWERS ONLY

22.	Information about the program/project(s) under review was provided sufficiently prior to the review session.	<i>disagree</i> 1 2 3 4 5 3.6	<i>agree</i>
23.	Review instructions were provided in a timely manner.	<i>disagree</i> 1 2 3 4 5 4.0	<i>agree</i>
24.	The information provided in the presentations was adequate for a meaningful review of the projects.	<i>Disagree</i> <i>agree</i> 1 2 3 4 5 3.4	
25.	The evaluation criteria upon which the review was organized were clearly defined and used appropriately.	<i>disagree</i>	<i>agree</i>
	1. <i>Relevance</i>	1 2 3 4 5	4.2
	2. <i>Approach</i>	1 2 3 4 5	4.2
	3. <i>Technical Accomplishments and Progress</i>	1 2 3 4 5	4.2
	4. <i>Technology Transfer/Collaboration</i>	1 2 3 4 5	3.5
	5. <i>Proposed Future Research</i>	1 2 3 4 5	3.5
26.	Explanation of the questions within the criteria was clear and sufficient.	<i>disagree</i>	<i>agree</i>
	1. <i>Relevance</i>	1 2 3 4 5	4.0
	2. <i>Approach</i>	1 2 3 4 5	4.2
	3. <i>Technical Accomplishments and Progress</i>	1 2 3 4 5	4.2
	4. <i>Technology Transfer/Collaboration</i>	1 2 3 4 5	3.8
	5. <i>Proposed Future Research</i>	1 2 3 4 5	4.0
27.	The right criteria and weightings were used to evaluate the project(s)/program.	<i>disagree</i>	<i>agree</i>
	1. <i>Relevance</i>	1 2 3 4 5	3.9
	2. <i>Approach</i>	1 2 3 4 5	4.3
	3. <i>Technical Accomplishments and Progress</i>	1 2 3 4 5	4.1
	4. <i>Technology Transfer/Collaboration</i>	1 2 3 4 5	4.2
	5. <i>Proposed Future Research</i>	1 2 3 4 5	3.9

APPENDIX C: FEEDBACK AND RECOMMENDATIONS

28.	During the review, reviewers had adequate access to the Principal Investigators.	<i>disagree</i> <i>1 2 3 4 5</i> 3.9	<i>agree</i>
29.	Information on the location and timing of the projects was adequate and easy to find.	<i>disagree</i> <i>1 2 3 4 5</i> 4.4	<i>agree</i>
30.	The number of projects I was expected to review was a. Too many b. Too few c. About right	<i>disagree</i> <i>1 2 3 4 5</i> <i>1 2 3 4 5</i> <i>1 2 3 4 5</i> 2 2 4	<i>agree</i>
31.	The reviewers in your session had the proper mix and depth of credentials for the purpose of the review.	<i>Disagree</i> <i>1 2 3 4 5</i> 3.8 <u>7</u> <i>Don't know their credentials</i>	<i>agree</i>
32.	Altogether, the preparatory materials, presentations, and the Question & Answer period provided sufficient depth for a meaningful review.	<i>disagree</i> <i>1 2 3 4 5</i> 3.7	<i>agree</i>

C. QUESTIONS 33 THROUGH 43 FOR PRESENTERS ONLY

33.	The request to provide a presentation for the review was provided sufficiently prior to the deadline for submission.	<i>disagree</i> <i>1 2 3 4 5</i> 4.7	<i>agree</i>
34.	Instructions for preparing the presentation were sufficient.	<i>disagree</i> <i>1 2 3 4 5</i> 4.8	<i>agree</i>
35.	The template for the presentation was helpful.	<i>disagree</i> <i>1 2 3 4 5</i> 4.8	<i>agree</i>
36.	The PDF format provided adequate functionality for my presentation.	<i>disagree</i> <i>1 2 3 4 5</i> 4.8	<i>agree</i>
37.	The time limit for my presentation was adequate to present the information needed by reviewers.	<i>disagree</i> <i>1 2 3 4 5</i> 4.9	<i>agree</i>
38.	The audio and visual equipment worked properly and were adequate.	<i>disagree</i> <i>1 2 3 4 5</i> 4.8	<i>agree</i>

39.	The evaluation criteria upon which the review was organized were clearly defined and used appropriately	<i>disagree</i>				<i>agree</i>
	1. <i>Relevance</i>	1	2	3	4	5 4.5
	2. <i>Approach</i>	1	2	3	4	5 4.5
	3. <i>Technical Accomplishments and Progress</i>	1	2	3	4	5 4.6
	4. <i>Technology Transfer/Collaboration</i>	1	2	3	4	5 4.5
	5. <i>Proposed Future Research</i>	1	2	3	4	5 4.6
40.	Explanation of the questions within the criteria was clear and sufficient.	<i>disagree</i>				<i>agree</i>
	1. <i>Relevance</i>	1	2	3	4	5 4.5
	2. <i>Approach</i>	1	2	3	4	5 4.5
	3. <i>Technical Accomplishments and Progress</i>	1	2	3	4	5 4.7
	4. <i>Technology Transfer/Collaboration</i>	1	2	3	4	5 4.5
	5. <i>Proposed Future Research</i>	1	2	3	4	5 4.6
41.	The right criteria and weightings were used to evaluate the project(s)/program.	<i>disagree</i>				<i>agree</i>
	1. <i>Relevance</i>	1	2	3	4	5 4.6
	2. <i>Approach</i>	1	2	3	4	5 4.6
	3. <i>Technical Accomplishments and Progress</i>	1	2	3	4	5 4.6
	4. <i>Technology Transfer/Collaboration</i>	1	2	3	4	5 4.7
	5. <i>Proposed Future Research</i>	1	2	3	4	5 4.5
42.	During the review, reviewers had adequate access to the Principal Investigators.	<i>Disagree</i>				<i>agree</i>
		1	2	3	4	5
						4.2
43.	Altogether, the preparatory materials, presentations, and the Question & Answer period provided sufficient depth of review	<i>disagree</i>				<i>agree</i>
		1	2	3	4	5
						4.4

