Ultra-Deepwater Advisory Committee (UDAC) Meeting
March 5, 2008

Meeting Minutes

July 2, 2008

A Federal Advisory Committee to the U.S. Secretary of Energy

Ultra-Deepwater Advisory Committee

I hereby certify that this transcript constitutes an accurate record of the Ultra-Deepwater Advisory Committee Meeting held on March 5, 2008 at the Alexandria Hilton in Alexandria, Virginia.

Philip J. Grossweiler, Chair
Ultra-Deepwater Advisory
Committee

7/29/2008
Date

Ultra-Deepwater Advisory Committee - March 5, 2008 Meeting Minutes
Alexandria Hilton Hotel, Alexandria, VA

Welcome and Introduction

Mr. Phillip Grossweiler opened the meeting at 8:00 a.m. and welcomed the Ultra-Deepwater Advisory Committee (the Committee). Mr. Grossweiler shared his thoughts on safety with the Committee and reminded everyone not to drive while using the cell phone. He noted that some companies have specific policies that restrict use of cell phones while on company business. He also reviewed some of the state laws that pertain to cell phone use.

At 8:05 a.m., Mr. Grossweiler introduced Mr. Guido DeHoratiis who welcomed the group and outlined the agenda. He then asked each member of the Committee to reintroduce himself or herself.

The agenda is detailed in Attachment 1. Mr. DeHoratiis outlined the objectives of the Committee meeting, which involved preparing final recommendations on the 2008 Ultra-Deepwater Draft Annual Plan (the Plan), which is required by section 999 of the Energy Policy Act of 2005 (EPACT). The Plan had been previously reviewed in January and February. Mr. DeHoratiis also noted that Mr. Jim Slutz, Acting Principal Deputy Assistant Secretary for the Office of Fossil Energy, would join the group later during the day and that Mr. Slutz had sent his apologies for not being able to attend for the entire meeting. He also wanted to pass on the message that the activities of the Committee were a priority for the Department of Energy (DOE) and that Department senior management were anxious to receive Committee feedback. In his stead, Mr. Slutz had appointed Mr. DeHoratiis as the Acting Designated Federal Officer. Attachment 1 also details the Delegation of Authority.

Mr. DeHoratiis also outlined the role of the Editing Subcommittee, which was to incorporate the day's meeting output and to prepare a final edited document formatted in an appropriate manner to reflect the Committee recommendations. It was understood that the Editing Subcommittee did not have any authority to alter the content or intention of any of the Committee recommendations, but rather to ensure that the final document reflected the work of the Committee in a well-written, professional manner. It was also noted that the role of the Editing Subcommittee had been established based on the lessons learned from prior meetings. Specifically, the study found that too much valuable Committee time had been spent on routine editorial matters.

Reporting of Subcommittee Activities

At 8:15 a.m., Mr. Grossweiler reviewed the early morning agenda. This called for each subcommittee to review its respective group output followed by the opportunity for Committee members to make brief comments. The Chair requested that this discussion be limited to broad points of clarification and he reminded the group that more time had been set aside during the rest of the day for more detailed discussions about each

subcommittee's activities and recommendations. The intention of the morning session was only to put each subcommittee's activities into perspective so that potential overlaps of emphasis or conflicts could be identified at the outset of the meeting, and to provide overall direction for the content and consistency of the Annual Plan recommendations.

Each subcommittee chair presented his or her respective group's recommendations, which are presented in Attachment 2. After each presentation, a brief Q&A session was held.

Some of the specific comments raised during the discussion periods are noted below:

- The definition of ultra-deepwater was discussed at length. Many Committee members felt that the current definition of more than 1,500 meters, which is specified in EPACT section 999, was not challenging enough in light of a] most recent industry actual drilling experience and b] the general Research Partnership to Secure Energy for America (RPSEA) desire to focus on "grand challenge" concept developments. In effect, the Committee questioned why RPSEA should focus on technology challenges in water depths where industry has already achieved stable operations and the ability to manage pertinent risks. It was noted that some companies have already successfully drilled in water depths in the range of 3,500–4,000 meters. It was also suggested that the water depth definition should not be a specific number; rather, it should only be bounded by the deepest water depth in the central Gulf of Mexico.

- On the subject of Intellectual Property (IP) rights issues, there was concern that this subject area was unduly impacting the scope of RPSEA activities. For example, there are non-proprietary opportunities in enhanced imaging technologies that RPSEA could pursue. It was also noted that the proprietary aspect of geosciences and seismic data in particular comes into play in the interpretation of the data and not in the creation of the data. Hence, there are ample opportunities for new research and development (R&D) in the geosciences area. Nonetheless, all agreed that the IP rights issue is an important one and more effort should be expended in assuring researchers that IP issues are addressed adequately and fairly. In areas where IP issues present major stumbling blocks, the focus should be on collaborative type R&D programs which would be of wider use to all industry members. Taking these issues into account, it was suggested that fruitful areas for R&D might include focusing on equipment, materials, facilities design issues that impact investment, and operating costs.

- There was broad agreement in the need for an improved roadmap for the Ultra-Deepwater (UDW) program with the specific goal of increasing reserves, assuring that the program focus is not duplicative with other industry R&D programs, and making cost benefit analyses more transparent. A common road map would be very helpful in prioritizing the many R&D opportunities and guiding the decision making process. The last roadmap that had been developed was based on $15/Bbl oil prices so it was agreed that this would be a fruitful area to explore. Also, it was

noted that significant volumes of oil are left unproduced in existing wells. Developing new technologies to produce the remaining oil would be of value as much of the investment is already in place with established footprints.

- The success of the R&D program is hindered by the fact that the industry is very busy with private industry-directed R&D programs that have been motivated by the recent high crude oil prices. Therefore, RPSEA needs to develop appropriate "push" mechanisms to achieve the appropriate response to solicitations and to encourage the needed consortia joint programs among industry and academia to develop effective responses to RPSEA's programs.

- An outreach program was identified as a possible mechanism to improve participation in the R&D solicitation programs; however, the question of funding was raised as a possible issue. The DOE re-emphasized the roles and responsibilities of the Committee, specifically that the Committee should focus its attention on developing recommendations and improvements to the Plan and leave the implementation and funding issues to the DOE. A member suggested that perhaps this might be something that should be funded under the NETL Complementary Program or the traditional program.

- In order to address the limited response to solicitations, it was suggested that RPSEA needs to have a proactive program of communication at senior level of management in academia and industry to emphasize the value of the R&D program. It was judged insufficient just to use conventional existing communication channels for this effort; for example, web-based communications or mass emails. It was also noted that RPSEA is not using some of the industry clearinghouse mechanisms for communicating new R&D solicitations which were deemed worthy of exploration.

- Another key objective of the RPSEA program relates to the ongoing industry R&D program. The point was made that the DOE/RPSEA program endeavors to complement that program, not to compete with it.

- The challenges involved with the solicitation process were discussed at length. From the researchers' perspective, it was noted that some companies are not set up to respond to the government-based request for proposals (RFPs) due to the paperwork involved with proposal preparation and extensive audit motivated record keeping requirements and resulting extra staff resource needs. From a RPSEA perspective it was noted that last years solicitations resulted in $200 million of identified R&D opportunities that eventually were funneled down to $15 million which results in a strong future resource base for RPSEA featuring close academic relationships with 20 member universities that are actively involved in oil industry R&D programs.

- One of the mechanisms that can be used to improve funding for the R&D programs deals with cost sharing. One of the key observations was that perhaps

the level of cost sharing is not emphasized enough in the RFPs. For example, if it was clearly communicated that cost sharing is an import element of the program award criteria, then it would logically follow that respondents would dedicate more effort to that area. This would also encourage more joint consortia approaches and involvement of private industry that could be drawn into participating in promising and innovative R&D ideas, and who might be encouraged to contribute additional cost share funds. This could be achieved by elevating the weighting on the cost share aspects.

- Regarding the program metrics aspects, it was suggested that RPSEA should place more emphasis on focusing the RFPs to achieve increased reserves as opposed to developing new processes or techniques. In effect, there should be more emphasis on identifying the possible bottom line impact on the goal of increasing reserves. However, it was noted that care has to be taken in making this assessment as it is not a trivial matter.

- The Committee showed great interest on the subject of total funding for Section 999. The Committee felt that a positive statement was required on the subject of funding and to lay the groundwork for a strong defense of the existing levels of funding at a minimum, and optimistically, additional funding in the future as the program evolves.

  It was noted that the target industry for the parallel onshore unconventional resources effort is significantly different from the UDW group. First of all, it can be argued that the UDW activity has higher level of available resources as many more large international oil companies are represented in the UDW group. On a positive note, it was observed that smaller oil and gas companies are now involved in the shallower depths in the Gulf of Mexico where none existed only a few years ago. This means that the results of the UDW activity will be of interest to a wider range of oil and gas companies and not just the largest companies. It can also be argued that the magnitude of investment and operating costs and the ultimate payout for offshore unconventional resources can be significantly higher than onshore unconventional resources.

  Committee members noted that the political realities of the situation cannot be ignored... In an environment where the administration is arguing for cancellation of the Section 999 program and other Congressional leaders argue for the cancellation of tax breaks offered to the oil industry in the original EPAct 2005 legislation, it would seem inappropriate for the industry to be seen seeking additional funding. There was also some concern that raising this issue might bring the base level of funding into question. Therefore it was decided that this subject was best left dormant.

  The DOE commented that the current legislation already provides for the possibility of additional funding up to $100 million per year, for a total of $150 million per year. Most of the Committee felt that another important element is the

continuity of funds from year to year. Considering that many of the R&D projects involve multiyear efforts, this factor can have a significant impact on the effectiveness and efficiency of R&D programs. It is highly desirable to avoid the start and stop interruptions that have been experienced in the past.

- An observation was made that the UDW program still seems to give low priority to environmental issues. Although it can be argued that the meteorological and oceanographic (Met Ocean) topic addresses environmental issues, it was pointed out that it is essentially silent on the matter of biological impacts. It was suggested that stronger recommendations were needed in the environmental area, to be discussed later in the day.

- Discussion also focused on the desirability of enhancing the visibility of environmental issues in the RFP process and specifically identifying the environmental impact of each project. Also, it was recognized that this impact could be positive or negative. For example, projects that sought to reduce costs by reducing the footprint may also have significant positive environmental impacts. It was also suggested that when the final recommendations are discussed, the desirability of establishing a standalone RFP that focused on environmental matters should be considered.

The Committee broke for coffee at 10:15 a.m.

Discussion of Recommendations

At 10:30 a.m., Mr. Grossweiler concluded the opening session and turned attention to the detailed subcommittee discussions and development of final recommendations. A facilitator had been arranged to ensure that the discussions were coordinated in an orderly manner and to ensure that the Committee reached final conclusions in a timely fashion. The final recommendations of the full Committee are detailed in Attachment 3.

Program Focus Subcommittee

The original Subcommittee recommendation on updating the resource base was essentially unchanged.

The Committee agreed that there are still too many themes for the allotted funds to address adequately. Hence, the number of themes should be streamlined. The primary concern was the dilution effect on funding; the Committee felt it was more desirable to concentrate funding in more selective projects. Cost benefit analysis should be used as key criteria in making this adjustment.

The original recommendation dealing with Grand Challenges remains intact but it was recommended that the “impact” on increasing proven reserves (a key objective of the program) should also be used as a criterion in defining grand challenge.

The recommendation dealing with placing emphasis on longer term (vs near term initiatives) and breakthrough R&D projects remained as originally established.

Emphasis on the UDW nature of the R&D programs was adopted with the suggestion that the water depth should be revised to target water and reservoir depths that are currently not covered by industry. This acknowledges that industry already is well beyond the original 1,500 meter definition set in the original legislation.

The Subcommittee recommendation dealing with intellectual property rights was accepted essentially as originally drafted. In the discussion, members commented that there are many areas involving exploration and geosciences that are not necessarily proprietary. However it was pointed out that interpretation of seismic data was closely guarded by industry and certainly a key proprietary subject.

The recommendation dealing with an improved roadmap was adopted as originally proposed except that the findings were extracted separately and enhanced with the addition of seismic and reservoir properties, delineation, and prediction subtopics.

The wording of the item dealing with concentrating program efforts was modified to incorporate the concept of focusing on projects that are complementary to or advance current industry efforts. Effort was taken to avoid redundancy.

The recommendation dealing with the transparency of the cost benefit analysis was adopted.

In the section dealing with Projects and New Architecture, the first item was modified as a finding which served to motivate other recommendations and to refocus attention to the cost benefit analysis. The remaining items in this section were judged to be duplicative of other recommendations and therefore were deleted.

Solicitation Process Subcommittee

The discussion of the Solicitation Subcommittee began at 11:35 a.m. In order to better communicate the underlying issues behind the recommendations, it was decided that the findings #1, 2, and 3 should be regrouped into the beginning of the section and the recommendations should follow.

The meeting broke for lunch at 11:55 a.m. and reconvened at 12:30 p.m.

The recommendation dealing with overall communication strategy was reworded to be clearer in terms of suggested action.

The item dealing with advertising at the Offshore Technology Conference (OTC) was modified to stress the importance of focusing on the need to explain the nature of the Section 999 program and to disseminate the results and to include other professional society meetings.

The recommendation dealing with international collaboration was modified to become action- oriented by incorporating "consider" investigating and stimulate if appropriate.

A recommendation was made that RPSEA should take over NETL's administrative role to improve efficiency. After extensive discussion, it was concluded that the essence of the issue dealt with the inefficiencies in the solicitation review and approval processes. Hence, it was decided to include this concept in the earlier recommendation dealing with "interviewing all responders to the solicitations" and to add wording to use their feedback in identifying lessons learned and using the results to streamline the solicitation process. The Committee concluded that it was impractical to eliminate the DOE reviews and approval process as much of these are directed by the enabling legislation.

The Committee concurred that the recommendation from the Funding and Metrics Section dealing with increased RFP circulation was better suited in the Solicitation Section and hence it was deleted from the Funding and Metrics Section.

The original findings and recommendations #4 and #5 dealing with… were retained as originally set.

The original finding and recommendation dealing with the lack of response to the Met Ocean RFP was deleted as it has already been addressed separately by RPSEA prior to the meeting.

Program Funding and Metrics Subcommittee

The discussion of the Funding and Metrics Subcommittee began at 1:25 p.m.

Recommendation 1.1 involving outside funding was adopted as originally drafted.

Recommendation 1.2 regarding cost sharing was adopted essentially as originally drafted except that it was suggested to increase the cost sharing weight. This way, it is clear to responders that their ability to increase cost sharing is a priority objective. Also, a schedule of cost share should be established that acknowledges differences between academic and industry proposals. A minority opinion was expressed that this cost share criteria should not apply at the early stages of R&D where field demonstrations are not yet required and the costs associated with individual projects are at a lower level. At the same time, it was recommended that RPSEA should use its extensive networking capability to educate and discuss the benefits of cost sharing with prospective R&D investigators.

The findings and recommendation dealing with measuring the technology impact were adopted with some minor reorganization into a standard finding/recommendations approach.

Regarding item 4 “Connect projects to specific recovery improvements,” the findings and recommendations were restructured to conform with the document standard.

Recommendation 4.1 regarding the hydrocarbon recovery factor for ultra-deepwater reserves was reworded to place additional emphasis on this objective for both conversion of discovered resources and for additions to the UDW resource base.

Item 4.2 dealing with identifying the potential goals at the RFP stage was judged to be somewhat redundant with previously adopted recommendations and therefore deleted.

Items 5.1, 5.2, and 5.3 which focused on external communications and advertising program achievements, were edited to broaden the application and to heighten the awareness of the Section 999 Program to industry and the public in general.

Recommendation 5.4 dealing with techniques for communicating upcoming RFP’s was judged to better apply in the Solicitation Section.

The Committee broke for coffee at 2:30 p.m. and resumed activities at 3:00 p.m.

Environmental, Safety, and Education Subcommittee

The format of the findings and recommendations was reorganized to conform to the document standard without changing the original content.

The recommendation dealing with establishing higher priority for environmental issues was adopted and strengthened by suggesting that, for example, environmental impact be given a higher weight in the project evaluation criteria.

Additionally, it was recommended that RPSEA adopt a standalone RFP topic specific to biological issues involved with deepwater exploration and production.

In the findings section, the term air and water “pollution” was changed to air and water “quality,” as it imparted a less negative tone.

In the area of safety, the Committee agreed that safety remains a top priority and it suggested using the project selection weighting criteria to ensure safety issues are considered on every project. The Committee also elaborated on the unique aspects of safety as it relates to the deepwater environment due to factors like extreme pressures, water depth, and distance from shore.

In the area of education, the Committee recommended that a portion of the program be dedicated to increasing the number of students (with hard math and science backgrounds) desiring to enter the curriculum. Also, the Committee suggested that the visibility of the program successes in the areas of safety and environment should be highlighted in reporting the results to the public and policymakers.

Executive Summary and Cover Letter

At 3:45 p.m., the Committee discussed the Executive Summary and the transmittal letter to the Secretary of Energy. These were largely endorsed as drafted and left to the Editing Subcommittee to conclude.

Instructions to the Editing Subcommittee

Next, the procedures for finalizing the letters were discussed. Specifically, a plan was adopted whereby the Editing Subcommittee would communicate the product of its effort to the full Committee by email and any final editorial comments would be incorporated into the document. Then, a final teleconference was scheduled for March 13 to discuss the final documents and conduct a roll call vote to approve the Letter to the Secretary and the Committee's final report.

Next Steps

At 4:40 p.m., Ms. Elena Melchert reviewed the plans for appointing new members to UDAC. She referenced the letter issued by Mr. Slutz on February 28, 2008, as shown in Attachment 4. Resumes were requested for appointment to the Committee to be submitted by May 2. It was stressed that aside from the established professional qualifications, any candidate for the Committee must be available for the established schedule for 2008, namely a Committee meeting on September 9 and 10 in Washington D.C., and October 15 and 16 in Houston, and a conference call on October 23. The DOE reviewed the qualifications for Committee members and noted that the DOE Office of General Counsel would be responsible for the selection of Committee members. It was noted that one of the key objectives is to have a broad range of views in addressing oil and gas matters.

Public Comment

At 4:50 p.m., Mr. DeHoratiis opened the meeting for public comment and as no comments were offered, he turned the meeting over to Mr. Slutz, who had just joined the meeting. Mr. Slutz apologized for not being available earlier in the day but he noted that he had been involved in budget discussions with Congress.

Meeting Adjournment

Mr. Slutz adjourned the meeting at 5:00 p.m.

Attachment Contents Page

Attachment 1

Agenda
Ultra-Deepwater Advisory Committee
Hilton Alexandria Old Town, 1767 King Street, Alexandria, Virginia
March 5, 2008

7:00	Registration and Continental Breakfast	
8:00	**Welcome and 'Safety Minute'**	[Phil Grossweiler, Chair]
8:10	**Opening Remarks**	[Guido DeHoratiis, Acting Designated Federal Officer]
8:20	**Reporting on Subcommittee Activities**	[Phil Grossweiler]

Subcommittee Chair presents Subcommittee report

Subcommittee Leaders			
Program Focus	**Solicitation Process**	**Program Funding and Metrics**	**Safety and Env. Impact**
Arnis J.	Ray C.	Luc I.	Quenton D.

Leaders introduce subcommittee comments, findings, and recommendations; limit discussion to clarifying questions only; highlight key messages to be included in the Executive Summary, and overriding message proposed for incorporation by the Committee Chair in the cover letter.

10:00	**Break**	
10:15	**Discussion of Recommendations** **Program Focus -- Solicitation Process** **Program Funding and Metric -- Safety and Env. Impact** Committee discussion on content and wording of recommendations; Identify level of agreement on recommendations as necessary. (Consensus vs. Majority Agreement vs. Minority Opinion)	[Facilitator]
12:00	**Lunch**	
1:00	**Continue Discussion of Recommendations**	[Facilitator]
2:45	**Break**	
	Continue Discussion of Recommendations	[Facilitator]
3:30	**Executive Summary and Cover Letter** Review content and key messages	[Phil Grossweiler]
4:00	**Instructions to the Editing Subcommittee**	[Phil Grossweiler]
4:15	**Next Steps** March 13th Meeting via conference call 2010 Advisory Committee	[Elena Melchert, Committee Manager]
4:30	**Public Comment**	[Guido DeHoratiis]
5:00	**Adjourn**	[Guido DeHoratiis]

APPROVED: _____ 7-28-08
James A. Slutz, Designated Federal Officer — Date

Department of Energy
Washington, DC 20585

MEMORANDUM FOR FILE

TO: ULTRA-DEEPWATER ADVISORY COMMITTEE

FROM: JAMES A. SLUTZ
DESIGNATED FEDERAL OFFICER
ULTRA-DEEPWATER ADVISORY COMMITTEE

SUBJECT: **Acting Designated Federal Officer**

I hereby designate Guido DeHoratiis, Acting Deputy Assistant Secretary of Oil and Natural Gas, to act as the Designated Federal Officer for the meeting of the Ultra-Deepwater Advisory Committee on March 5, 2008, in Washington, D.C.

Attachment 2

1.1 SUBCOMMITTEE: PROGRAM FUNDING AND METRICS

1) RPSEA draft and responses to UDAC

RPSEA is doing a very good job so far. We would like to underscore our support for the continuation of this program. We believe that there is a great potential here to help the country improve its domestic energy production with significantly green methods of production. It goes without saying, through the development of technology related to this program, that one can expect the creation of a significant number of new high-tech jobs and businesses.

2) Outside funding for RPSEA

The ultra-deepwater program is by definition a public/private partnership. Therefore nonfederal contributions are an option, at least in theory. Such contributions will, among its other benefits, significantly benefit large technological-development projects and facilitate the funding of the cost-sharing component of RPSEA solicitations for the academy. Moreover, the successes of RPSEA will have many fathers, which is good news for its long-term outlook.

1.1) So we recommend that RPSEA look at the legal, budgetary, and administrative issues related to taking advantage of potential private contributions to the program.

1.2) We will also recommend that RPSEA formulate RFPs to encourage the cost-sharing contributions to go well beyond the minimum 20% of the cost of the project, especially from those that can afford it. RPSEA can use its large membership and its industry contacts as another way to communicate with and educate potential investigators on the benefits of a large cost-sharing contribution. This recommendation can be implemented almost immediately, contrary to the first one.

3) Measuring the technology impact

3.1) It is important for RPSEA to include, in its planning and

analysis, ways of assessing the technological impact of the projects that it is funding. RPSEA can use some of its management budget to solicit help with these assessments from technology users and other experts.

3.2) More specifically, RPSEA should clearly identify the potential merits of all R&D projects by determining the applicable production and/or reserve impacts. In doing so, it will be more evident that the program funding is being appropriately directed to deliver the stated strategic program objectives. This should help assuage the concerns of the UDAC relative to the funneling process and the overall direction of the program-element funding (i.e., step-change technology). The assessed impact of each R&D project should be used by RPSEA in charting the strategic direction of the program, serving as the foundation for R&D project-narrowing decisions, and, finally, serving as a centerpiece of the solicitation/selection process.

4) Connect projects to specific recovery improvements.

4.1) We recommend that DOE, then subsequently RPSEA, set a more aggressive goal of the recovery factor for ultra-deepwater reserves. Although the challenges of exploration and production below the salt are much more difficult to overcome than those associated with reserves above the salt, we must still target a recovery factor on the order of half of that above the salt, say, 30 %. Such a target automatically pushes the program toward grand challenges—that is, toward basic and applied research and development, in which risk and payoff are both very high.

In the present climate of heightened interest by the public on matters related to energy, such an aggressive target may alleviate some concerns about the program.

4.2) The overall RPSEA goal must be refined at the level of RFPs so that the aggregate of successful projects can attain or surpass RPSEA's overall goal.

4.3) We recommend that RPSEA mix RFPs with fewer specificities and those with very technological targets as presented now. The goal of RFPs with fewer specificities is to provide room for proposals whose direction and thinking may be radically different from our present approaches and which may address new grand challenges.

5) How do we keep support for the Sect 999 program going long term?

5.1) Make sure that successful projects and breakthroughs that are connected in one form or another with RPSEA are well publicized.

5.2) Try when possible to stress that RPSEA successes have many fathers.

5.3) RPSEA can consider asking reputable bodies to evaluate its accomplishments and its impact on UD exploration and production down the road.

5.4.) We recommend that RPSEA develop ways of widening the circulation of its RFPs among potential investigators. For example, RPSEA can include funding-alert organizations like COS (Community of Science, fundingalert@cos.com) in its circulation list. These organizations send e-mails once a week about funding opportunities to members in their specific areas of experts. That is how most scientists learn and select when and where to send their proposals these days.

1.2 SUBCOMMITTEE: ROGRAM FOCUS

Overview

The subcommittee believes that the overall program addresses many of the challenges facing the industry in Ultra-Deepwater and that the planning process is of high quality. There are many significant technologies being developed that will be very useful to the industry and will, if successful, increase reserves and production.

The resource base of recoverable reserves should be updated by the DOE / consortium program. There exists the potential for additional large discoveries in the Ultra Deep Water of the Gulf of Mexico.

The program for 2008 was well presented and the committee reviewed possible improvements in the number of themes vs. budget, the focus on longer term research, the development of a roadmap for technology gaps in waters much deeper than 1500 meters, and some specific recommendations related to drilling and geosciences.

Recommendations

The Committee recommends the following:

Number of Themes / Grand Challenges

- The committee still believes that the 2008 program describes too many themes for the budget to adequately fund. In part the current themes have come from prior gap analyses; e.g. DeepStar.
- Grand Challenges should have more clarity and identification with respect to the program. There is support to fund transformational technologies.

Breakthrough technologies and longer term research

- Place additional focus on the longer term R&D projects. The committee notes that DOE's NETL program has identified some basic R&D in their 'complementary' program while the 'consortium' portfolio balance is less clear. The promotion of breakthrough technologies is warranted.
- More emphasis should be place on Ultra-Deepwater depths rather those deepwater depths defined simply as > 1500 meters.
- DOE/RPSEA needs to examine and articulate how to handle Intellectual Property when technologies in geosciences and exploration are proposed. The committee recognizes that advances in exploration technology (e.g. seismic) will play a role in enlarging the UDW resource base; however these may not fit the consortium concept.

Provision of 'Roadmap' for Ultra-Deepwater projects

- Develop an improved 'roadmap' of UDW program opportunities to address new topics in wells [costs], facilities, subsea, and other technologies. The current process of selecting projects for the themes may not fully address the objective to increase recoverable reserves and develop new architecture. Section 999a states that "Awards shall focus on the development and demonstration of individual exploration and production technologies as well as integrated systems technologies including new architectures for production in ultra-deepwater." Example technology gaps could include:
    - Reduced facility costs
    - Subsea to beach
    - Subsea construction and installation
    - Well intervention
    - Reservoir management
    - Stranded gas
- Concentrate program efforts on projects that the industry is neither addressing now nor willing to do so in the immediate future. The cost-benefit analysis of the 2008 consortium program is not transparent.

Projects and New 'Architecture'

- Increase the number of wells / drilling related themes in overall program; there seems to be much emphasis on production over other topics. Well costs can be over 50% of field development CAPEX.
- Increase guidance and emphasis on projects related to new architecture; e.g. only one noted in the 2008 consortium program related to 'subsea to beach'.
- *Majority Agreement*: Review the role of more geosciences projects recognizing the proprietary nature of the work.
- *Minority Opinion*: Recommend clarification and enhancement to the emphasis on exploration related themes. The exploration related part of the plan is relatively very small. The potential for additional very large discoveries in the Ultra Deep Water of the Gulf of Mexico is high. The large water depth poses significant challenges on Seismic and Non-Seismic data acquisition and imaging as well as detection of reservoir properties and estimation fluids and lithology.

1.3 SUBCOMMITTEE: SOLICITATION PROCESS

OVERVIEW

The solicitation subcommittee believes that the solicitation process is well defined and has been well communicated through REPSEA channels. Additional communication and market reach would enhance the quantity and quality of responses.

IP is very important to potential participants; simplification of the communication and processes are recommended.

To increase the number of responders, it is recommended that web-based training be considered for applicants and that the opportunities be advertised at major conferences.

A survey of appliers and other researchers who elected to not apply is recommended to capture strengths of the process and areas for improvement.

Six findings and associated recommendations are described below.

Finding #1: There has been a very limited response to the Solicitation process. We believe this to be due to:

- Industry in general is very busy and probably not looking for additional work
- Inadequate marketing of the solicitations
- The perception that the (US government) process is complex and bureaucratic
- There may be a specific concern on IP issues (loosing competitive advantage to proprietary research and development)
- The limited amount of funding available

If the Solicitation process is not successful in generating a significant number of quality submissions and in selecting the 'best' proposals then the whole program will not be effective.

Recommendations:

- Communication of overall strategy, focus areas and projects is important; workshops, conferences, websites and flyers have been effective in other research collaboratives
- Establish a pro-active emailing approach with information pushed to established and interested contacts in operating companies, contractors and academics
- Evaluate the "Advertising Approach" and broaden reach
- Advertise at OTC and other large conferences
- Evaluate "competition" for people and financial resources, look for and stimulate possible alliances
- A model for international collaboration could boost the reach and increase the interest in the program
- Interview all responders and some of the non-responders to the solicitations. What positives and negatives did they experience and what suggestions for improvement would they make

Finding #2: The Solicitation and selection process is well defined per the REPSEA UDW "Process Treadmill" as documented in the "Breakfast of Champions" Presentation. This has been well communicated to REPSEA members and their Subject Matter Experts/Project Champions through the "Breakfast of Champions".

Recommendations:

- Broaden communication of the process through meetings with academia, operators and contractors
- Suggest training and communication seminars at major events; e.g. OTC, Geological Society of America National Convention and AAPG Conventions.
- Seek Feedback from all members of REPSEA on broader communication

Finding #3: Process is complex, time consuming, bureaucratic and discourages participation.

Recommendations:

- IP is very important. Simplify communication and explanation of IP
- Offer training and assistance to submitters – consider a web-based tutorial
- Allow REPSEA to administer the program completely to improve efficiency. While law requires multiple DOE reviews, suggest that the value added by these reviews be evaluated by looking at the impact of each review on the quality of the outcome and the added time and administrative burden.

Finding #4: It is difficult for the advisory committee to judge the quality of submissions given the data made available.

Recommendations:

Provide committee an analysis of all submissions, to include:

- Number submitted by operators, academia, contractors or in collaboration
- Number rejected due to non-compliance with RFP
- Number rejected due to prioritization
- Provide a breakdown of number of submissions per the major research areas and for each RFP
- Provide data on leveraged funding
- Provide data on number of projects which are judged to be break through

Finding #5: There may be a few good ideas in the rejected list. A process needs to be added to provide value to all submitters and to ensure good ideas are pursued.

Recommendation:

Provide feedback to all submitters on:

- reasons for rejection
- improvement suggestions
- collaboration ideas
- encouragement to re-submit

Finding #6: There were no MetOcean research responses

Recommendation: Survey to understand why there were no responses then re-solicit and target researchers in this field

1.4 SUBCOMMITTEE: ENVIRONMENTAL, SAFETY, AND EDUCATION

Committee: Mary Jane Wilson, Yoram Shoham, Dan Seamount, Larry McKinney, and Quenton Dokken

The main goal of the Ultra-Deep Water Program (UDWP) element is to increase the size of the UDW resource base and to convert currently identified (discovered)

resources into economic recoverable (proven) reserves while improving safety and protecting the environment, thereby providing the U.S. consumer with secure and affordable petroleum supplies. This goal will be achieved by:

1) Reducing the costs to find, develop, and produce such resources,
2) Increasing the efficiency of exploration for such resources,
3) Increasing production efficiency and ultimate recovery of such resources,
4) Improving safety through education and training, and
5) Improving environmental performance, by minimizing any environmental impacts associated with UDW exploration and production.

Further, cross-cutting all elements of the program is a focus on the environment, including projects that minimize or mitigate environmental impact or risk, mitigate water usage, reduce the "footprint" of E&P operations and lower emissions.

Two of the Mid-Term (2009-2012) objectives (#5 and #6) are to work with appropriate regulatory agencies, academia, industry and other key stakeholders to identify strategies to improve environmental and safety performance during deepwater development, and develop and administer solicitations for contracts to develop technologies that can achieve these improvements.

To support rather than hinder the development and advancement of the UDWP and its output environmental considerations must be acknowledged as priority issues both in program development/description documents and in Request for Proposals (RFPs) distributed to the public for response. Assumptions of inclusion should be replaced with specific statements as to the intent of the UDWP regarding management and mitigation of any potential environmental impacts from the technology developed. It is imperative that improvements in safety and environmental protection by recent technological advances (e.g. extended reach drilling) should be discussed and pointed out in clarity in subsequent reports. This will help in writing up regulations and rules that are based adequate scientific research and not on presumptions and pessimism that lead to unnecessary regulatory slow downs and barriers. The improvements should also be communicated to the public, decision and policy makers, and others.

Education is an essential part of any successful safety and environmental program. Education is fundamental to the program in several ways. Education of the public and the Congress will assist in funding and implementing the program. This type of education is basically publicity, newspaper articles highlighting the program, whereas a speaker, well-placed at universities highlighting the program, can assist in gaining the proposals to further the technological breakthroughs while also inspiring students to think about a career in these types of applied sciences.

A second type of education is required when a technology has been initially developed. In this case industry education for its implementation in a broad base will be necessary. A revolutionary technology when first exposed to many industry technicians feeds upon itself and spawns even more advanced technologies and ideas.

A third type of education which may take some elemental research is on the human psychology side. The United States has become more of soft service country, the volume of students desiring to enter the curricula having hard math and science from which the new technologies actually stem are becoming less. There is no scarcity of these jobs, just an absence of interest or aversion to either the math and science or petroleum production. The effort to reach the next pool of scientists and engineers should reflect the nature of the demographics that we need to draw on and not on the nature of past petroleum professionals. Additionally, the psychology of training for not only safety but for the application of new technologies needs to be explored. Step change requires step change thinking.

To fully understand potential environmental impacts the unique character of the ultra-deepwater environment needs to be understood. Environmental impacts cannot be predetermined, but areas of potential impacts should be understood. These areas include:

1) Air pollution
    a. Gaseous
    b. Particulate
    c. Local and dispersed impacts.
2) Water pollution
    a. Surface
    b. Mid-water
    c. Bottom/seabed
    d. Produced water
    e. Exploration, drilling, production chemicals
    f. Particulates
    g. Cuttings
    h. Impacts of support vessels
    i. Introduction of invasive species
    j. Noise and ultrasonic pollution

The ultra-deepwater ecosystems must be characterized and research themes such as:

a. Currents,
b. Quality and quantity of naturally occurring hydrocarbons,
c. The interaction between marine life and hydrocarbon materials, both naturally occurring and introduced;

should be addressed.

Operational themes to address include:

a. Water management,
b. Record keeping and reporting,
c. Management of deck materials,
d. Management of produced materials.

In summary, to facilitate the most expedient route to the development of technology to support exploration, drilling, and production in Ultra-Deepwater ecosystems, consideration of safety and environmental protection must be priority and obvious. Education programs must be a component of the development of these

technologies. Funding to support the development of the technology must be adequate to support also environmental impact analysis and education outreach.

2.0 SUBGROUP TOPICS AND MEMBERS

4 Recommendation Areas:

Environmental, Safety, and Education

Committee: , and
Lead - Quenton Dokken
Members - Mary Jane Wilson, Yoram Shoham, Dan Seamount, Larry McKinney

Solicitation Process
Lead – Raymond Charles
Members – Paul Tranter, Tom Totten, Morten Weincke

Program Funding and Metrics
Lead – Ikelle
Members – Grossweiler, Abadie, Idelchik

Program Focus
Arnis Judzis (Lead)
Ray Charles, Joe Fowler, Yoram Shoham, Ron Bland, Morten Wiencke

Attachment 3

1.0 INTRODUCTION

The Ultra Deepwater Advisory Committee (UDAC) advisory committee was formed in accordance with provisions of Section 999D(a) of the 2005 Energy Policy Act (EPACT)

The committee consists of:

- individuals with extensive research experience or operational knowledge pertaining to the offshore oil and gas industry,
- individuals broadly represented live of affected interest in UltraDeepwater oil and gas, including environment and safety.

The provisions of EPACT excluded from eligibility to participate in UDAC Federal Employees or any persons affiliated with RPSEA including its Board Members, Officers or Employees of the Program Consortium.

The duties of the UDAC under EPACT Section 999 are to advise the Secretary on the development and implementation of programs under subtitle J related to Ultra Deepwater natural gas and other petroleum resources and to carry out the provisions of Section 999B(e) (2) (B).

The committee was officially chartered by letters from the secretary to individual members on May 11, 2007

2.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

Edit Note: Look through each of the subcommittee reports and identify key points you think should be noted in the executive summary.

The Combined Management Team in terms of the DOE, RPSEA and the Consortium with its extended network of industry resources is **excellent**. Likewise the management processes in place to plan and execute this complex 10 year R&D undertaking is **excellent**.

At the January 29th 2008 meeting the committee agreed to concentrate reviews with four separate subgroups concentrating on the following four subject areas:

- Program Focus
- Solicitation Process
- Program Funding and Metrics
- Environmental, Safety, and Education

General Comments are as noted below. Additional detail regarding each of these subject areas is provided below in Section 3.

Edit Note: Following from Environmental Committee

The main goal of the Ultra-Deep Water Program (UDWP) element is to increase the size of the UDW resource base and to convert currently identified (discovered) resources into economic recoverable (proven) reserves while improving safety and protecting the environment, thereby providing the U.S. consumer with secure and affordable petroleum supplies. This goal will be achieved by:

1) Reducing the costs to find, develop, and produce such resources,
2) Increasing the efficiency of exploration for such resources,
3) Increasing production efficiency and ultimate recovery of such resources,
4) Improving safety through education and training, and
5) Improving environmental performance, by minimizing any environmental impacts associated with UDW exploration and production.

Cross-cutting all elements of the program is a focus on the environment, including projects that minimize or mitigate environmental impact or risk, mitigate water usage, reduce the "footprint" of E&P operations and lower emissions

Education is fundamental to the program in several ways. Education of the public and the Congress will assist in funding and implementing the program. This type of education is

basically publicity, newspaper articles highlighting the program, whereas a speaker, well-placed at universities highlighting the program.

Edit Note: Connect this idea with the American Competitiveness Issue, America Competes Act, the Raising Above the Gathering Storm 2005 Report, American Workforce Development

Edit Note: Wording below from Last year – still relevant?

Successful execution of this R&D Program will materially contribute to U.S. supply of oil and gas and well beyond the 10 year R&D horizon. However, the goals noted with regard to additional resource capture directly attributable to this R&D Program are too low. This "unduly humble" assertion of benefit of the program is a potential source of concern in the event that potential opponents of the program challenge the justification for the investments in this R&D.

Edit note: Should we make a reference again to the NPC report "Facing The Hard Truths about Energy"??? Successful implementation will make a significant contribution to achieving the recommendations in that Report.

Edit Note: Following from Program Focus Subcommittee

Number of Themes / Grand Challenges
The committee still believes that the 2008 program describes too many themes for the budget to adequately fund. In part the current themes have come from prior gap analyses; e.g. DeepStar.
Grand Challenges should have more clarity and identification with respect to the program. There is support to fund transformational technologies.
Continue leveraging DeepStar knowledge base and experience.

Develop an improved 'roadmap' of UDW program opportunities to address new topics in wells [costs], facilities, subsea, and other technologies.

Concentrate program efforts on projects that the industry is neither addressing now nor willing to do so in the immediate future.

Edit Note: Following from Solicitation Subcommittee

IP is very important to potential participants; simplification of the communication and processes are recommended.
There has been a very limited response to the Solicitation process. If the Solicitation process is not successful in generating a significant number of quality submissions and in selecting the 'best' proposals then the whole program will not be effective.
Communication of overall strategy.
Evaluate the "Advertising Approach" and broaden reach

A model for international collaboration could boost the reach and increase the interest in the program

Edit Note: Following from Program Focus Subcommittee

Number of Themes / Grand Challenges

With regard to overall priorities the committee recommends:

- Providing more emphasis on achieving Grand Challenge R&D breakthroughs.
- Achieving strategic balance in setting priorities and balance between short term vs longer term research, between basic research and development related projects and targeting for both major successes vs. incremental R&D.
- The available funding will be limited relative to the list of potential projects outlined in the plan. It will be essential to properly rank potential projects and limit project awards to only the most highly rated projects.
- Ensuring levels of effort allocated to environmental issues meet realistic expectations of key stakeholders.
- Allocating sufficient effort to assessing and demonstrating the likely benefit of these R&D efforts in capturing additional resources in areas currently not open for access.

Edit Note: Following from Program Funding and Metrics Subcommittee

RPSEA is doing a very good job so far. We would like to underscore our support for the continuation of this program.

RPSEA look at the legal, budgetary, and administrative issues related to taking advantage of potential private contributions to the program.

It is important for RPSEA to include, in its planning and analysis, ways of assessing the technological impact of the projects that it is funding.

target a recovery factor on the order of half of 30 %. Such a target automatically pushes the program toward grand challenges—that is, toward basic and applied research and development, in which risk and payoff are both very high.

In the present climate of heightened interest by the public on matters related to energy, such an aggressive target may alleviate some concerns about the program.

3.0 SUB GROUP REPORTS

At the January 29th meeting the following Sub Groups and schedule was established for developing the Subgroup analyses and reports.

4 Recommendation Areas:

- Program Funding and Metrics
- Program Focus
- Solicitation Process
- Environmental, Safety, and Education

Schedule

2/15/2008 - Subcommittee Inputs to Leaders
2/25/2008 - Leaders submit recommendations to Chair
3/3/2008 - Combined Recommendations Distributed by Chair
3/5/2008 - 2nd Meeting in DC
3/10/2008 - Edit Committee Distribute Draft
3/13/2008 - Teleconference to Review and Vote on Final UDAC Report

3.1 PROGRAM FUNDING AND METRICS

1) RPSEA draft and responses to UDAC

RPSEA is doing a very good job so far. We would like to underscore our support for the continuation of this program. We believe that there is a great potential here to help the country improve its domestic energy production with significantly green methods of production. It goes without saying, through the development of technology related to this program, that one can expect the creation of a significant number of new high-tech jobs and businesses.

2) Outside funding for RPSEA

The ultra-deepwater program is by definition a public/private partnership. Therefore nonfederal contributions are an option,

at least in theory. Such contributions will, among its other benefits, significantly benefit large technological-development projects and facilitate the funding of the cost-sharing component of RPSEA solicitations for the academy. Moreover, the successes of RPSEA will have many fathers, which is good news for its long-term outlook.

1.1) So we recommend that RPSEA look at the legal, budgetary, and administrative issues related to taking advantage of potential private contributions to the program.

1.2) We will also recommend that RPSEA formulate RFPs to encourage the cost-sharing contributions to go well beyond the minimum 20% of the cost of the project, especially from those that can afford it. RPSEA can use its large membership and its industry contacts as another way to communicate with and educate potential investigators on the benefits of a large cost-sharing contribution. This recommendation can be implemented almost immediately, contrary to the first one.

3) Measuring the technology impact

3.1) It is important for RPSEA to include, in its planning and analysis, ways of assessing the technological impact of the projects that it is funding. RPSEA can use some of its management budget to solicit help with these assessments from technology users and other experts.

3.2) More specifically, RPSEA should clearly identify the potential merits of all R&D projects by determining the applicable production and/or reserve impacts. In doing so, it will be more evident that the program funding is being appropriately directed to deliver the stated strategic program objectives. This should help assuage the concerns of the UDAC relative to the funneling process and the overall direction of the program-element funding (i.e., step-change technology). The assessed impact of each R&D project should be used by RPSEA in charting the strategic direction of the program, serving as the foundation for R&D project-narrowing decisions, and, finally, serving as a centerpiece of the solicitation/selection process.

4) Connect projects to specific recovery improvements.

4.1) We recommend that DOE, then subsequently RPSEA, set a more

aggressive goal of the recovery factor for ultra-deepwater reserves. Although the challenges of exploration and production below the salt are much more difficult to overcome than those associated with reserves above the salt, we must still target a recovery factor on the order of half of that above the salt, say, 30 %. Such a target automatically pushes the program toward grand challenges—that is, toward basic and applied research and development, in which risk and payoff are both very high.

In the present climate of heightened interest by the public on matters related to energy, such an aggressive target may alleviate some concerns about the program.

4.2) The overall RPSEA goal must be refined at the level of RFPs so that the aggregate of successful projects can attain or surpass RPSEA's overall goal.

4.3) We recommend that RPSEA mix RFPs with fewer specificities and those with very technological targets as presented now. The goal of RFPs with fewer specificities is to provide room for proposals whose direction and thinking may be radically different from our present approaches and which may address new grand challenges.

5) How do we keep support for the Sect 999 program going long term?

5.1) Make sure that successful projects and breakthroughs that are connected in one form or another with RPSEA are well publicized.

5.2) Try when possible to stress that RPSEA successes have many fathers.

5.3) RPSEA can consider asking reputable bodies to evaluate its accomplishments and its impact on UD exploration and production down the road.

5.4.) We recommend that RPSEA develop ways of widening the circulation of its RFPs among potential investigators. For example, RPSEA can include funding-alert organizations like COS (Community of Science, fundingalert@cos.com) in its circulation list. These organizations send e-mails once a week about funding opportunities to members in their specific areas of experts. That is how most scientists learn and select when and where to send their proposals these days.

3.2 PROGRAM FOCUS

Overview

The subcommittee believes that the overall program addresses many of the challenges facing the industry in Ultra-Deepwater and that the planning process is of high quality. There are many significant technologies being developed that will be very useful to the industry and will, if successful, increase reserves and production.

The resource base of recoverable reserves should be updated by the DOE / consortium program. There exists the potential for additional large discoveries in the Ultra Deep Water of the Gulf of Mexico.

The program for 2008 was well presented and the committee reviewed possible improvements in the number of themes vs. budget, the focus on longer term research, the development of a roadmap for technology gaps in waters much deeper than 1500 meters, and some specific recommendations related to drilling and geosciences.

Recommendations

The Committee recommends the following:

<u>Number of Themes / Grand Challenges</u>

- The committee still believes that the 2008 program describes too many themes for the budget to adequately fund. In part the current themes have come from prior gap analyses; e.g. DeepStar.
- Grand Challenges should have more clarity and identification with respect to the program. There is support to fund transformational technologies.

<u>Breakthrough technologies and longer term research</u>

- Place additional focus on the longer term R&D projects. The committee notes that DOE's NETL program has identified some basic R&D in their 'complementary' program while the 'consortium' portfolio balance is less clear. The promotion of breakthrough technologies is warranted.
- More emphasis should be place on Ultra-Deepwater depths rather those deepwater depths defined simply as > 1500 meters.
- DOE/RPSEA needs to examine and articulate how to handle Intellectual Property when technologies in geosciences and exploration are proposed. The committee recognizes that advances in exploration technology (e.g. seismic) will play a role in enlarging the UDW resource base; however these may not fit the consortium concept.

<u>Provision of 'Roadmap' for Ultra-Deepwater projects</u>

- Develop an improved 'roadmap' of UDW program opportunities to address new topics in wells [costs], facilities, subsea, and other technologies. The current process of selecting projects for the themes may not fully address the objective to increase recoverable reserves and develop new architecture. Section 999a states that "Awards shall focus on the development and demonstration of individual exploration and production technologies as well as integrated systems technologies including new architectures for production in ultra-deepwater." Example technology gaps could include:
    - Reduced facility costs
    - Subsea to beach
    - Subsea construction and installation
    - Well intervention
    - Reservoir management
    - Stranded gas
- Concentrate program efforts on projects that the industry is neither addressing now nor willing to do so in the immediate future. The cost-benefit analysis of the 2008 consortium program is not transparent.

Projects and New 'Architecture'

- Increase the number of wells / drilling related themes in overall program; there seems to be much emphasis on production over other topics. Well costs can be over 50% of field development CAPEX.
- Increase guidance and emphasis on projects related to new architecture; e.g. only one noted in the 2008 consortium program related to 'subsea to beach'.
- *Majority Agreement*: Review the role of more geosciences projects recognizing the proprietary nature of the work.
- *Minority Opinion*: Recommend clarification and enhancement to the emphasis on exploration related themes. The exploration related part of the plan is relatively very small. The potential for additional very large discoveries in the Ultra Deep Water of the Gulf of Mexico is high. The large water depth poses significant challenges on Seismic and Non-Seismic data acquisition and imaging as well as detection of reservoir properties and estimation fluids and lithology.

3.3 SOLICITATION PROCESS

OVERVIEW

The solicitation subcommittee believes that the solicitation process is well defined and has been well communicated through REPSEA channels. Additional communication and market reach would enhance the quantity and quality of responses.

IP is very important to potential participants; simplification of the communication and processes are recommended.

To increase the number of responders, it is recommended that web-based training be considered for applicants and that the opportunities be advertised at major conferences.

A survey of appliers and other researchers who elected to not apply is recommended to capture strengths of the process and areas for improvement.

Six findings and associated recommendations are described below.

Finding #1: There has been a very limited response to the Solicitation process. We believe this to be due to:

- Industry in general is very busy and probably not looking for additional work
- Inadequate marketing of the solicitations
- The perception that the (US government) process is complex and bureaucratic
- There may be a specific concern on IP issues (loosing competitive advantage to proprietary research and development)
- The limited amount of funding available

If the Solicitation process is not successful in generating a significant number of quality submissions and in selecting the 'best' proposals then the whole program will not be effective.

Recommendations:

- Communication of overall strategy, focus areas and projects is important; workshops, conferences, websites and flyers have been effective in other research collaboratives
- Establish a pro-active emailing approach with information pushed to established and interested contacts in operating companies, contractors and academics
- Evaluate the "Advertising Approach" and broaden reach
- Advertise at OTC and other large conferences
- Evaluate "competition" for people and financial resources, look for and stimulate possible alliances
- A model for international collaboration could boost the reach and increase the interest in the program
- Interview all responders and some of the non-responders to the solicitations. What positives and negatives did they experience and what suggestions for improvement would they make

Finding #2: The Solicitation and selection process is well defined per the REPSEA UDW "Process Treadmill" as documented in the "Breakfast of Champions" Presentation. This has been well communicated to REPSEA members and their Subject Matter Experts/Project Champions through the "Breakfast of Champions".

Recommendations:

- Broaden communication of the process through meetings with academia, operators and contractors

- Suggest training and communication seminars at major events; e.g. OTC, Geological Society of America National Convention and AAPG Conventions.
- Seek Feedback from all members of REPSEA on broader communication

Finding #3: Process is complex, time consuming, bureaucratic and discourages participation.

Recommendations:

- IP is very important. Simplify communication and explanation of IP
- Offer training and assistance to submitters – consider a web-based tutorial
- Allow REPSEA to administer the program completely to improve efficiency. While law requires multiple DOE reviews, suggest that the value added by these reviews be evaluated by looking at the impact of each review on the quality of the outcome and the added time and administrative burden.

Finding #4: It is difficult for the advisory committee to judge the quality of submissions given the data made available.

Recommendations:

Provide committee an analysis of all submissions, to include:

- Number submitted by operators, academia, contractors or in collaboration
- Number rejected due to non-compliance with RFP
- Number rejected due to prioritization
- Provide a breakdown of number of submissions per the major research areas and for each RFP
- Provide data on leveraged funding
- Provide data on number of projects which are judged to be break through

Finding #5: There may be a few good ideas in the rejected list. A process needs to be added to provide value to all submitters and to ensure good ideas are pursued.

Recommendation:

Provide feedback to all submitters on:

- reasons for rejection
- improvement suggestions
- collaboration ideas
- encouragement to re-submit

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Recommendation: Survey to understand why there were no responses then re-solicit and target researchers in this field

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To fully understand potential environmental impacts the unique character of the ultra-deepwater environment needs to be understood. Environmental impacts cannot be predetermined, but areas of potential impacts should be understood. These areas include:

3) Air pollution
    a. Gaseous
    b. Particulate
    c. Local and dispersed impacts.
4) Water pollution
    a. Surface
    b. Mid-water
    c. Bottom/seabed
    d. Produced water
    e. Exploration, drilling, production chemicals
    f. Particulates
    g. Cuttings
    h. Impacts of support vessels
    i. Introduction of invasive species
    j. Noise and ultrasonic pollution

The ultra-deepwater ecosystems must be characterized and research themes such as:

    d. Currents,
    e. Quality and quantity of naturally occurring hydrocarbons,
    f. The interaction between marine life and hydrocarbon materials, both naturally occurring and introduced;

should be addressed.

Operational themes to address include:

e. Water management,
f. Record keeping and reporting,
g. Management of deck materials,
h. Management of produced materials.

In summary, to facilitate the most expedient route to the development of technology to support exploration, drilling, and production in Ultra-Deepwater ecosystems, consideration of safety and environmental protection must be priority and obvious. Education programs must be a component of the development of these technologies. Funding to support the development of the technology must be adequate to support also environmental impact analysis and education outreach.

4.0 SUBGROUP TOPICS AND MEMBERS

4 Recommendation Areas:

Environmental, Safety, and Education

Committee: , and
Lead - Quenton Dokken
Members - Mary Jane Wilson, Yoram Shoham, Dan Seamount, Larry McKinney

Solicitation Process
Lead – Raymond Charles
Members – Paul Tranter, Tom Totten, Morten Weincke

Program Funding and Metrics
Lead – Ikelle
Members – Grossweiler, Abadie, Idelchik

Program Focus
Arnis Judzis (Lead)
Ray Charles, Joe Fowler, Yoram Shoham, Ron Bland, Morten Wiencke

Attachment 4

Department of Energy
Washington, DC 20585

February 28, 2008

Dear Colleague:

The U.S. Department of Energy's (DOE) Office of Fossil Energy is now soliciting nominations for candidates to serve as members on one of two federal advisory committees chartered under the Energy Policy Act of 2005 (EPACT), Subtitle J, section 999D. The Advisory Committees will advise the Secretary of Energy on research programs related to ultra-deepwater and unconventional petroleum resources technology. These programs will develop and implement research, development, demonstration, and commercial application of technologies for ultra-deepwater and unconventional natural gas and other petroleum resource exploration and production.

Nominations for either of these committees must be received by May 2, 2008. Qualifications for membership are subject to the Federal Advisory Committee Act and to additional qualifications stated in the above referenced subtitle of EPACT.

Members will be appointed by the Secretary of Energy, and will serve approximately two years. The first meetings of the committee for the *2009 Annual* Plan will be held on September 9 or 10, 2008, and then again on October 15 or 16, 2008. A final meeting via conference call will be held on October 23, 2008. Additional meetings will be planned for review of the *2010 Annual Plan*.

The Ultra-Deepwater Advisory Committee (UDAC) will advise the Secretary on development and implementation of technology research programs related to ultra-deepwater natural gas and other petroleum resources. For more information about the UDAC and the nomination process for this advisory committee, please visit http://www.fe.doe.gov/programs/oilgas/advisorycommittees/UltraDeepwater.html.

The Unconventional Resources Technology Advisory Committee (URTAC) will advise the Secretary on the development and implementation of technologies related to onshore unconventional natural gas and other petroleum resources. For more information about the URTAC and the nomination process for this advisory committee, please visit http://www.fe.doe.gov/programs/oilgas/advisorycommittees/UnconventionalResources.html.

I encourage you to recommend qualified individuals to serve on these committees.

For more information on Section 999 of EPACT, please visit one of the above Committee websites. Questions regarding the nomination process or the committees should be directed to Bill Hochheiser or Elena Melchert at (202) 586-5600.

Sincerely,

James A. Slutz
Acting Principal Deputy Assistant Secretary
Office of Fossil Energy

Attachment 5

Ultra-Deepwater Advisory Committee Meeting

Public Walk-In List - March 5, 2008

Last Name	First Name	Organization
Beach	Steve	RPSEA
Else	Mik	Minerals Management Service
Fray	Russell	RPSEA
Haver	Chris	RPSEA
Helms	Lynn	IOGCC
Knaus	Emily	Intek, Inc.
Ming	Mike	RPSEA
Myers	Greg	Integrated Ocean Drilling Program
Phifer	Brook	Nico Resources
Potter	Eric	Bureau of Economic Geology
Salzman	Stephen	Bureau of Land Management
Schroeder	Art	RPSEA
Siegfried	Bob	RPSEA
Syms	Harold	Minerals Management Service
Trepod	Allison	SRI International