The Ultra-Deepwater Advisory Committee

Advisory Committee to The Secretary of Energy Established Under EPACT 2005 Section 999

March 14, 2008

The Honorable Samuel W. Bodman
Secretary of Energy
Washington, DC 20585

Dear Mr. Secretary;

On behalf of the Ultra-Deepwater Advisory Committee (UDAC), I am pleased to submit the results of our review of the Draft Ultra-Deepwater & Unconventional Gas 2008 Research and Development Plan. This review covers the Ultra-Deepwater part of the R&D Plan.

The UDAC notes that the management team planning and executing the Ultra-Deepwater Program - DOE and RPSEA (the Consortium) with its extended network of industry resources is very experienced and capable. Over the last year this team has continuously improved the management processes required to plan and execute this complex 10 year R&D program and the committee is impressed with progress made to date.

The Committee believes that the value of this research, as reflected in the targets set for additional discoveries and resources which can be moved from discovery to development, is potentially grossly understated. Exploration in the ultra-deepwater regions of the Gulf of Mexico is in the early phase of the discovery to development cycle. Based on the number of discoveries made to date, the challenges associated with all stages of discovering and developing these resources will be very significant. This is an area of high risk / high benefit which is appropriate for U.S. Government support in early research phases.

The range of forecasts for U.S. oil and gas supply and consumption (EIA, IEA, Energy Company sources) all indicate that in the year 2030 and beyond the percentage of U.S. energy supplied by oil and gas will have not decreased significantly from today. The priority on R&D programs related to oil and gas should be commensurate with the need to develop new technologies which will be critical to delivering higher volumes of oil and gas to the U.S. markets. **Every barrel or mscf we produce in the U.S. is a barrel or mscf we don't have to import.** The Committee recommends that DOE, in conjunction with EIA and other U.S. Government agencies and stakeholders, develop a realistic estimate of the potential impact of success with the program resulting in additional domestic oil and gas production. This should include impacts on broader U.S. economic and geopolitical issues such as the U.S. current account deficit, royalty income, tax revenues, U.S. jobs, and technology leadership.

The Ultra-Deepwater Advisory Committee

Advisory Committee to The Secretary of Energy Established Under EPACT 2005 Section 999

The UDAC again recommends more emphasis on cross-cutting and breakthrough projects.

The program is focused on basic and applied research that benefits all sectors of the energy industry and will produce near and long-term benefits for the American people. We recommend that the DOE work within the Administration to sustain the program and not leave its future in doubt. The current priority should be on sustaining the funding of the program as it is. When success of the initial projects is demonstrated, a plan to expand the program should be developed and implemented.

The Department of Energy can and should provide a unique forum for bringing together the necessary elements of this type of collaborative program. A long-term commitment to ultra-deepwater R&D is essential because of the high costs and risks and the potential for high payouts. These challenges are not the same as drilling in mature offshore areas in shallower water depths.

The Section 999 research program supports the conclusions and recommendations in the National Petroleum Council 2007 Report - Facing the Hard Truths About Energy. The program can also support other national initiatives such as the America Competes Initiative and the vision articulated in the National Academy of Sciences report - Raising Above the Gathering Storm. The Committee recommends that DOE consider how the Section 999 program benefits these national priorities when developing future justifications, plans and budgets for the program.

Respectfully submitted,

Philip J Grossweiler
Chair - UDAC

Ultra-Deepwater Advisory Committee

2008 Ultra-Deepwater Annual Plan
DOE/NETL-2007/1283

Comments and Recommendations

March 2008

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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 with a broad range of interests in UltraDeepwater oil and gas, including environment and safety.

See Section 5.0 for a list of Committee members.

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 chartered by letters from the Secretary to individual members on May 11, 2007.

The DOE Designated Federal Officer provided additional guidance for the 2008 Plan Review at the 1st meeting of UDAC in Houston on January 30th, 2008. See Appendix Section 6.2

The Schedule of work for the review of the 2008 Plan included the following key milestones:

1/09/2008 - DOE Notice to UDAC for 2008 Plan Review. See Appendix Section 6.1
1/30/2008 - 1st Meeting in Houston
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 Alexandria, VA
3/10/2008 - Edit Committee Distribute Draft Final Report and Transmittal Letter to UDAC
3/13/2008 - Teleconference to Review and Vote on Final UDAC Report

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2.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

The UDAC notes that the management team planning and executing the Ultra-Deepwater Program - DOE and RPSEA (the Consortium) with its extended network of industry resources is very experienced and capable. Over the last year this team has continuously improved the management processes required to plan and execute this complex 10 year R&D program and the committee is impressed with progress made to date.

At the January 29th 2008 meeting the committee agreed to concentrate reviews with four separate subcommittees addressing 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 in Section 3.

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 economically 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.

Developing resources in an environmentally responsible way applies to all elements of the program. It is expected that the program will result in technologies and projects that minimize or mitigate environmental impact or risk, mitigate water usage, or reduce the "footprint" of E&P operations.

Educating the public and policymakers is critical. Outreach and marketing of the program is needed to maintain and increase funding for the program and implementing the program. This effort should include publicity, newspaper articles highlighting the program, presentations at universities and industry forums.

Successful execution of this program will contribute to key national policy initiatives for addressing American workforce development and competitiveness in the world economy.

One initiative is the vision established in the National Academies analysis which was published in the report Rising Above the Gathering Storm. The Ultra Deepwater program could facilitate developing advanced technologies with direct benefit to the energy producing sector of the U.S. economy and help maintain United States leadership in technologies for energy production.

The longer term execution of the Ultra Deepwater program could and should be structured to support the general objectives of the Administration's America Competes Initiative and the policies established in the America Competes Act.

In communicating the overall benefits of the program DOE and RPSEA should emphasize how the program is aligned with and contributes to achieving the overall recommendations of the National Petroleum Council July 2007 report The Hard Truths - Facing the Hard Facts About Energy.

Successful execution of this R&D Program will materially contribute to U.S. supply of oil and gas 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. It is beyond the scope of the UDAC to develop a specific target or range of targets for additional resource capture which could result from a successful long term UDAC program. However, much larger targets for both oil and gas seem appropriate. Considering the drain of energy import costs on the U.S. Current Account Deficit and the steady fall in the value of the U.S. dollar, a successful Ultra Deepwater program could have major positive impact on the U.S. economy. In the committee's opinion, DOE and RPSEA should prepare an analysis of the range of these benefits to the U.S. economy.

Specific recommendations are provided in Section 3 below. With regard to overall priorities the committee recommends the following key points. Future refinements to the plan should:

- Provide more emphasis on achieving Grand Challenge R&D breakthroughs.
- Achieve a strategic balance in setting priorities and balance between short term versus longer term research, between basic research and development related projects and targeting for both major successes vs. incremental R&D.
- Properly rank potential projects and limit project awards to only the highest additional resource capture projects. The available funding will be limited relative to the list of potential projects outlined in the plan.
- Ensure levels of effort allocated to environmental issues meet realistic expectations of key stakeholders.
- Allocate sufficient effort to assessing and demonstrating the likely benefit of these R&D efforts in capturing additional resources, including in areas on the U.S. Continental Shelf currently not open for access.

3.0 SUB GROUP REPORTS

At the January 30th meeting the UDAC agreed to divide the review into the following program elements:

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

Sub Groups were formed to assess the 2008 Plan for each of these program elements and set the schedule for completing the review and recommendations to the Secretary as follows:

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 Alexandria, VA
3/10/2008 - Edit Committee Distribute Draft Final Report and Transmittal Letter to UDAC
3/13/2008 - Teleconference to Review and Vote on Final UDAC Report

3.1 PROGRAM FUNDING AND METRICS

Finding #1: RPSEA Draft 2008 Plan and Responses to UDAC Comments on 2007 Plan

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 could expect the creation of a significant number of new high-tech jobs and businesses.

Finding: Outside funding for RPSEA

The ultra-deepwater program is by definition a public/private partnership. RPSEA should look at ways to possibly increase the cost sharing contribution from project project participants. Getting additional contributions, including in-kind contributions, can significantly benefit the larger technological development projects. The weighting given to cost share in the solicitation process was low (less than 15%) and therefore did not promote cost share above the 20% minimum. We believe that if you increase the weighting it will promote a larger cost share and increased collaboration between respondents.

Recommendations.

- We recommend that RPSEA look at the legal, budgetary, and administrative issues related to taking advantage of potential private contributions to the program.
- We recommend that RPSEA formulate RFPs to encourage the cost-sharing contributions to go well beyond the minimum 20% of the cost of the project; for example, increase the weight given to the cost-share element in the solicitation process and consider the establishment of a schedule for cost share that would distinguish between universities and industry. **Minority Opinion:** This weighting should not be applied to the early stages of the R&D.
- We recommend that RPSEA 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.

Finding #2: Measuring the technology impact

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.

Recommendations.

- RPSEA should use some of its management budget to solicit help with these assessments from technology users and other experts.
- 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.

Finding #3: Connect projects to specific recovery improvements.

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 cost benefit of the program.

RFPs with fewer specificities provide room for proposals whose direction and thinking may be radically different from our present approaches and which may address new grand challenges.

Recommendations.

- RPSEA/DOE set significantly more aggressive target metrics in the Plan for additions to the ultra-deepwater resource base and for conversion of discovered resources into economically recoverable resources.
- RPSEA include at least a few non-specific RFPs (simple problem statement) in addition to those having very specific technological targets as presented now.

Finding #4: Maintaining support for the Section 999 Program

Overall support and funding for the program are potentially at risk.

Recommendations

- Publicize successful projects and breakthroughs that are connected in one form or another with the Section 999 Program to build public awareness and support.
- Majority Agreement: DOE should publish the results of evaluations by recognized independent bodies of the Program's accomplishments and its future impact on UDW exploration and production.

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 by this program 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.

Finding #1: Resource base understated.

There exists the potential for additional large discoveries in the Ultra Deep Water of the Gulf of Mexico.

Recommendation

- The resource base of potential reserves related to the Ultra-Deepwater Program should be updated by the DOE / consortium program in conjunction with other agencies and organizations.

Finding #2: Number of Themes / Grand Challenges

The committee still believes that the 2008 program describes too many themes for the budget to adequately fund. Additionally, the project portfolio between wells / drilling related projects relative to production projects in overall program appears to be out of balance (skewed towards production topics).

Recommendations

- The number of themes to be addressed should be based on a cost/benefit analysis (see other recommendation).
- Grand Challenges should have more clarity and identification with respect to the program. The Grand Challenge definition should be expanded to include “impact.”

Finding #3: Breakthrough technologies and longer term research

Many projects in the portfolio are aimed at shorter term developments.

Recommendations

- 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.
- Place more emphasis on Ultra-Deepwater developments (water and reservoir depth) currently not covered by industry.
- DOE/RPSEA needs to examine and articulate how to handle Intellectual Property when technologies are proposed. The committee recognizes that advances in geosciences technology will play a role in enlarging the UDW resource base; however some may not fit the consortium concept.

Finding #4: Emphasis on Increasing Resources

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 but are not limited to:

- Reduced facility costs
- Subsea to beach
- Subsea construction and installation
- Well intervention
- Reservoir management
- Stranded gas
- Seismics
- Reservoir properties, delineation and prediction

Recommendations

- Concentrate program efforts on projects that are complementary to or advance current industry R&D efforts; avoid R&D redundancy.
- The cost-benefit analysis of the 2008 consortium program should be made more compelling and transparent.
- Develop an improved 'roadmap' of UDW program opportunities to address new architectures for production (wells [costs], facilities, subsea), geoscience and other related technologies.

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.

Intellectual Property 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 suppliers and other researchers who elected to not apply is recommended to capture strengths of the process and areas for improvement.

Five 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 (losing 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.

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

Finding #3: The solicitation process (including the IP issue) is perceived as complex, time consuming, bureaucratic and discourages participation.

Recommendations:

- Improve communication of overall strategy through the roadmap. Employ workshops, conferences, websites and flyers.

- Establish a pro-active communication approach with information pushed to established and appropriate contacts in operating companies, contractors and academics; build additional relationships
- Evaluate the "Advertising Approach" and broaden reach
- Explain the Program and disseminate results at technical conferences (e.g., OTC) and other professional society meetings.
- Investigate and stimulate possible alliances
- Consider international collaboration to boost the reach and increase the interest in the program
- Interview all responders and some of the non-responders to the solicitations. Determine positives and negatives they experienced and their suggestions for improvement. Use this feedback to streamline the solicitation process.
- Simplify communication and explanation of IP in the solicitation. Intellectual property (IP) is very important.
- Offer assistance to submitters/awardees – consider a web-based tutorial related to governmental administration requirements as well as the solicitation process.
- We recommend that RPSEA develop ways of widening the circulation of its RFPs among potential investigators. For example, RPSEA could 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 expertise. That is how most scientists learn and select when and where to send their proposals these days.

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

Recommendations:

That RPSEA provide the 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 cost share 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:

RPSEA should provide feedback to all submitters on:

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

3.4 ENVIRONMENTAL, SAFETY, AND EDUCATION

Finding #1: Placing Emphasis on Environmental Issues

Environmental issues must be a priority. 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 quality
    a. Gaseous
    b. Particulate
    c. Local and dispersed impacts.
2) Water quality
    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.

Recommendations:

- Establish environmental protection as a priority, for example use the project selection weighting criteria to ensure that environmental impact is considered in every project.
- Establish an environmental RFP topic specific or relevant to deepwater, especially biological issues.

Finding #2: Ensuring Appropriate Attention to Safety Issues

Safety issues must be handled as a high and near-term priority. This is particularly important in ultra-deep water where pressure, temperature, water depth and distance from shore are critical factors.

Recommendations:

- Establish personal and process safety as a priority, for example by using the project selection weighting criteria to ensure that safety issues are considered in every project.

Finding #3: Educating the Public and Stakeholders

Education and workforce development must be a priority.

Recommendations:

- Have a portion of the program dedicated to increasing the number of students desiring to enter the curricula having hard math and science.
- Improvements in safety and environmental protection resulting from Program R&D technological advances (for example, extended reach drilling) should be discussed in reports of the results and communicated to the public, policymakers and others.

Comments

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 of environment priorities 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 agencies in writing regulations and rules that are based on 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 should include publicity, newspaper articles highlighting the program. Another example is with a speaker program, well-placed at universities highlighting the program, to 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 is steadily becoming more of service economy. The numbers of students desiring to enter the curricula having hard math and science from which the new technologies actually stem is decreasing. There is no scarcity of high tech jobs in the energy industry, 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.

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 ULTRA DEEPWATER ADVISORY COMMITTEE

Mr. Kent F. Abadie	Manager, Development and Production	Shell Exploration & Production Company	New Orleans, LA
Mr. Ronald G. Bland	Shared Technologies Manager	Bake Hughes Drilling Fluids	Houston, TX
Mr. Raymond G. Charles	Area Exploration & Geoscience Manager	ExxonMobil Exploration Company	Houston, TX
Mr. Quenton R. Dokken	Executive Director	Gulf of Mexico Foundation	Corpus Christi, TX
Dr. Joe R. Fowler*	President	Stress Engineering Services, Inc.	Houston, TX
Mr. Phil Grossweiler*	Energy Industry Consultant	M&H Energy Services	Houston, TX
Mr. Michael Idelchik	Vice President Advanced Technologies	General Electric Company	Niskayuna, NY
Dr. Luc T. Ikelle*	Robert R. Berg Professor	Texas A&M University	College Station, TX
Mr. Arnis Judzis	Vice President	Schlumberger, Inc.	Salt Lake City, UT
Dr. Larry D. McKinney	Director of Coastal Fisheries	Texas Parks & Wildlife Department	Aransas Pass, TX
Mr. Albert Modiano	Vice President	U.S. Oil & Gas Association	Washington, DC
Mr. Richard L. Morrison	Vice President Safety & Technology – GoM Deepwater	BP America Inc.	Houston, TX
Mr. Daniel T. Seamount, Jr.	Commissioner	Alaska Oil & Gas Conservation Commission	Anchorage, AK
Dr. Yoram Shoham*	Geophysicist	Society of Exploration Geophysicists	Bellaire, TX
Dr. Roger M. Slatt*	Gungoll Chair Professor of Petroleum Geology & Geophysics	University of Oklahoma Sarkeys Energy Center	Norman, OK
Mr. Thomas N. Totten	Manager – Marine Strategic Planning	J. Ray McDermott	Houston, TX
Mr. Paul H. Tranter	Vice President Performance & Operations	Transocean, Inc.	Houston, TX
Mr. Paul M. Wiencke	Director	Research Council of Norway	Oslo, Norway
Ms. Mary Jane Wilson*	President and CEO	WZI Inc.	Bakersfield, CA

* Special Government Employee

5.0 SUBGROUP TOPICS AND MEMBERS

The program review was divided in the following work areas.

Environmental, Safety, and Education

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 – Luc Ikelle
Members – Phil Grossweiler, Kent Abadie, Michael Idelchik

Program Focus

Lead - Arnis Judzis
Ray Charles, Joe Fowler, Yoram Shoham, Ron Bland, Morten Wiencke

6.0 APPENDICES

6.1 DOE MEETING NOTICE FOR 30JAN08 MEETING

Dear Ultra-Deepwater Advisory Committee Member:

The next meeting of the Ultra-Deepwater Advisory Committee will be held on January 30, 2008 at the Crowne Plaza Houston North Greenspoint, 425 N. Sam Houston Parkway East, Houston, TX 77060. This is a one-day meeting.

Attached you will find copies of the *2008 Annual Plan Draft* and the Draft 2008 Plan *NETL Complementary Research and Development Program*. Hard copy of these documents will be shipped overnight to you upon request.

The January meeting is the first of three meetings that will focus on the development of written recommendations by the Committee for the Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Resources Research and Development Program as required by the Energy Policy Act of 2005, Section 999.

Below is the topical agenda for this meeting with approximate times for each section. Please note that each topic will be followed by a short period of questions and/or discussion by the Committee members. The meeting format will begin with remarks by the Designated Federal Officer and include a Facilitator to support the Chair and Co-Chair. The meeting will conclude after the Committee has developed a plan for systematic review of the plans by designated Sub-Committees. Formal minutes of the meeting will be published on the Committee website.

Topical Agenda for the January 30, 2008 meeting of the
Ultra-Deepwater Advisory Committee

7:00 am	Breakfast
8:00 am	Call to Order; Welcome/Introductions;
	Instructions from the Designated Federal Officer;
	Update *2007 Annual Plan*
	Update 2007 *NETL Complementary Research and Development Program*
	Update 2007 DOE Traditional Program
	Overview 2008 DOE Traditional Program
	Overview 2008 *NETL Complementary Research and Development Program*
	Overview *2008 Annual Plan*
12:00 pm	Lunch
1:00 pm	Committee members organize to review *2008 Annual Plan*
4:15 pm	New Business: Overview of 2008-2010 Committee Cycle
4:30 pm	Public Comment [prior request required]
5:00 pm	Adjourn

During the second meeting on March 5, 2008 in Washington, D.C. the Committee will focus on formalizing its recommendations regarding the *2008 Annual Plan*. We expect that those recommendations will be drafted by working groups during February, as was done last year. Following the second meeting, it is expected that a small group of Committee members will edit

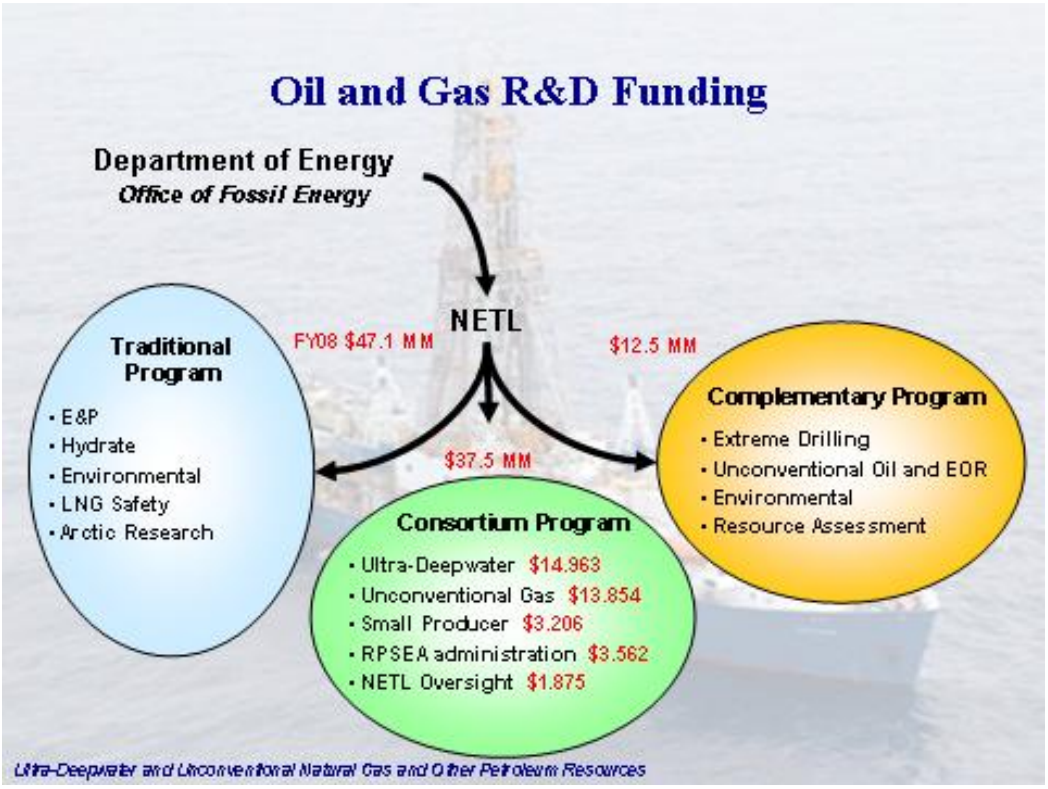
a final statement of Committee recommendations. Formal approval of the Committee's final written recommendations will be sought by a vote of its members at the third meeting to be held on March 13, 2008 by conference call.

We look forward to working with you again on this project.

Sincerely,

Elena Melchert
Bill Hochheiser
Committee Managers
Unconventional Resources Technology Advisory Committee

6.2 DOE GUIDANCE TO ULTRA- DEEPWATER ADVISORY COMMITTEE



Traditional and Section 999 Natural Gas and Oil Technology Programs

Budget ($ million)

	FY05	FY06	FY07	FY08
NATURAL GAS	43.6	32.7	12.0	19.8
OIL TECHNOLOGY	33.0	31.7	2.7	5.0
OTHER OIL AND GAS	—	—	—	22.3
SECTION 999-ULTRA DEEP	0	0	50.0	50.0
GRAND TOTAL	76.6	64.4	64.7	97.1

Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Resources

Committee Instructions

- **Role: Provide advice to DOE**
  - Provide recommendations on the development and priorities of the research program
  - Look at objectives of the annual plan within the context of the overall program
  - Focus on Consortium-administered portion of the Plan, and also comment on NETL research and potential for duplication between NETL and Consortium portions
- **Guidance**
  - Focus on big picture. Don't rewrite plan but advise on strengths and weaknesses.
  - Consensus is good, but should not be forced.
  - Majority opinion with minority viewpoint is fine.

Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Resources

Meeting Objectives

- **Finalize Committee advice by March 2008**
  - During Today's meeting
    - Speakers provide background presentations
      - Committee asks clarifying questions
    - Facilitated Committee Discussions
      - Initiate discussion on Plan
      - Develop process to complete Committee work
  - March meeting in DC
    - Draft final recommendations
    - Appoint editing subcommittee
  - Conference call in March
    - Approval of final recommendations that will be presented to DOE

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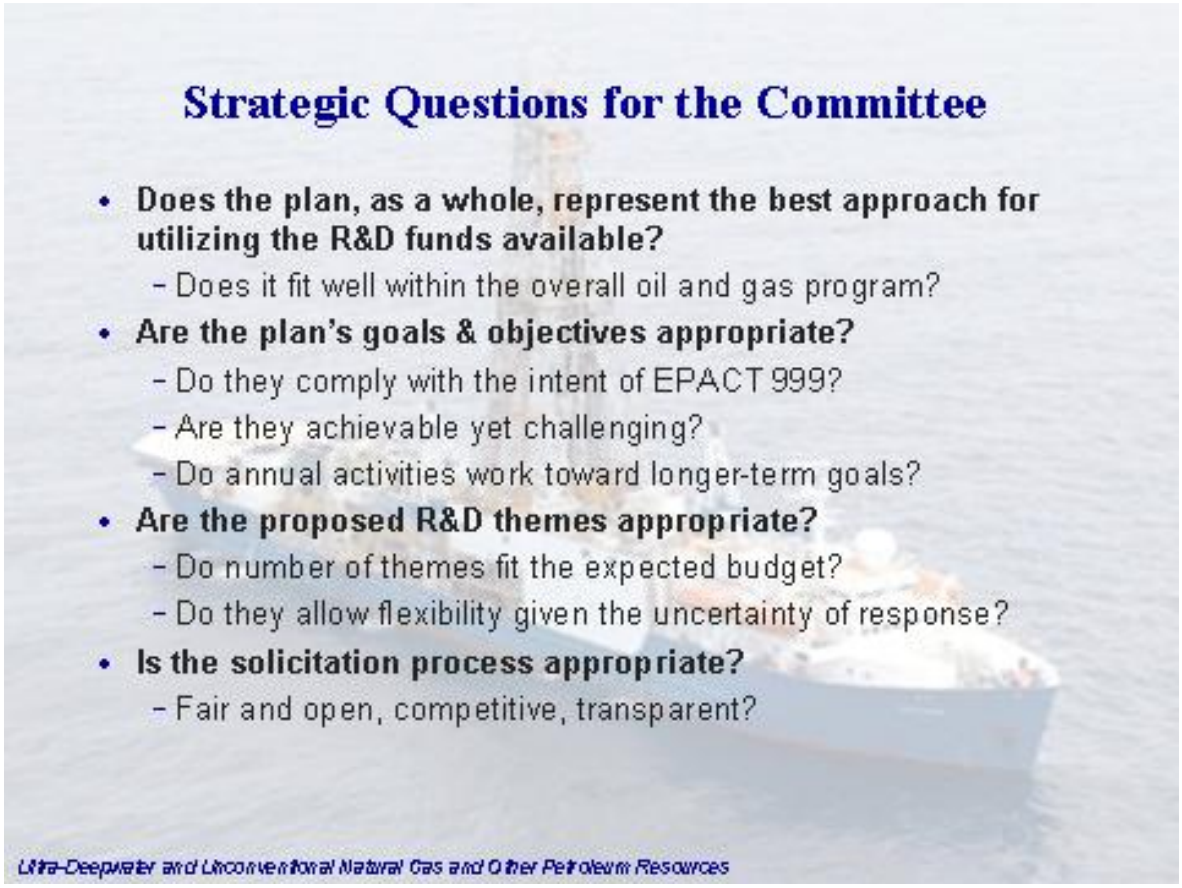
Strategic Questions for the Committee
• Does the plan, as a whole, represent the best approach for utilizing the R&D funds available?
– Does it fit well within the overall oil and gas program?
• Are the plan's goals & objectives appropriate?
– Do they comply with the intent of EPACT 999?
– Are they achievable yet challenging?
– Do annual activities work toward longer-term goals?
• Are the proposed R&D themes appropriate?
– Do number of themes fit the expected budget?
– Do they allow flexibility given the uncertainty of response?
• Is the solicitation process appropriate?
– Fair and open, competitive, transparent?
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