Unconventional Resources Technology Advisory Committee (URTAC) Meeting
March 4, 2008

Meeting Minutes

July 2, 2008

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

Unconventional Resources Technology Advisory Committee

I hereby certify that this transcript constitutes an accurate record of the Unconventional Resources Technology Advisory Committee Meeting held on March 4, 2008 at the Alexandria Hilton in Alexandria, Virginia.

Sally G. Zinke, Chair
Unconventional Resources
Technology Advisory Committee

7/27/08

Date

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

Unconventional Resources Technology Advisory Committee
March 4, 2008 - Meeting Minutes
Alexandria Hilton Hotel, Alexandria, VA

Welcome and Introduction

Mr. Jim Slutz, the Acting Principal Deputy Assistant Secretary for the Office of Fossil Energy, opened the meeting at 8:00 a.m. and welcomed the Ultra-Deepwater Advisory Committee (the Committee). He thanked the group for their diligent work in prior meetings and mentioned that he looked forward to their recommendations at the close of today's session. Mr. Slutz appointed Mr. Guido DeHoratiis as the Acting Designated Federal Officer for the meeting as Mr. Slutz had unavoidable schedule conflicts later in the day. Mr. Slutz then turned over the meeting to Mr. DeHoratiis. Each member of the Committee was asked to introduce himself or herself and then Mr. DeHoratiis outlined the plan for the day. The agenda for the meeting is detailed in Attachment 1, along with the Delegation of Authority document. Mr. DeHoratiis reiterated the objectives of the Committee meeting which involved preparing final recommendations on the 2008 Unconventional Resources Technology Draft Annual Plan (the Plan). This subject had been reviewed and discussed at the recent January Houston meeting and in subsequent subcommittee teleconference meetings that were held during February.

Mr. DeHoratiis also outlined the role of the Editing Subcommittee, which was to take the output from the meeting today 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 conclusions 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 Editing Subcommittee role had been established based on the lessons learned from prior meetings. Specifically, it was found that too much valuable Committee time had been spent on routine editorial matters and therefore the Committee had agreed to leave the final editorial task to a separate subcommittee instead of involving the entire Committee.

Subcommittee Reports – Opening Discussions

At 8:15 a.m., Mr. DeHoratiis turned the meeting over to the Committee Chair, Ms. Sally Zinke. She reviewed the plan for the first part of the morning, which was for each subcommittee to review the output of its respective groups in a brief overview format 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 she 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 activity into perspective so that potential overlaps of emphasis or conflicts could be identified at the outset of the meeting. This way, the Committee would have a good sense for the overall direction of the content and consistency of the recommendations on the Plan before delving into detailed discussions.

Each subcommittee chair presented his or her respective group's recommendations, which are presented in Attachment 2. A brief discussion period followed each subcommittee presentation where the other members of the Committee explored general questions about the approach and nature of the conclusions as detailed below:

- Aside from the challenges dealing with communicating the positive results from successful projects, there were questions regarding the sharing of information on rejected project proposals and the associated lessons learned from those ventures. Information on rejected projects would not be made public; however, lessons learned were to be discussed between the Research Partnership for Securing Energy for America (RPSEA) and the National Energy Technology Laboratory (NETL) and implemented if appropriate.

- The Committee believes that the unconventional resources R&D program is an essential element to support the many independent small producers in industry who represent a significant share of the total domestic natural gas production. It was noted that many of the laboratories that have in the past supported new innovative and successful ideas in the unconventional resources area have ceased operation, including those operated by Marathon, BP, and Amoco. This was another argument for supporting RPSEA's ongoing activities.

- The Committee felt that it was important to plan ahead and prepare to send a message to the new administration regarding the value of the RPSEA program. In that vein, some of the Committee members expressed frustration that as of 1Q2008 the program is just now getting to the stage of making contract awards and they felt that the program should be further along. It was also noted that the RPSEA activity is constantly under scrutiny due to the current administration's desire to repeal the program and heightened oversight by the Government Accountability Office (GAO) in assessing the results of the Unconventional Program. Therefore, there were many challenges for URTAC to clearly spell out the justification for the program to ensure not only continued funding at current levels, but also to secure additional funding in future years. The example of coal bed methane (CBM) was used to support the arguments noting that CBM makes up nearly 10 percent of the current domestic gas production and if it were not for the innovative R&D sponsored by the Department of Energy (DOE) in years past, these resources would never have been economically recovered. The Committee also wants to highlight the wide range of geographic interests that are served by the program to build home state support.

- The Committee felt that it was prudent to delay work on some "other petroleum" related R&D topics due to extraordinary concerns relating to resource assessments, impact of environmental issues, and possibly pending environmental legislation.

- The Content Subcommittee had been charged with the responsibility of commenting on the content of Requests for Proposals (RFPs). But due to limitations established in the original legislation, the Committee is restricted from commenting on specific projects and therefore the Subcommittee was not able to develop specific recommendations. Although contract awards are publicized, the rejected proposals cannot be publicized due to procurement regulations. It was noted that the interests of small producers are important to the

unconventional program and in fact, a large percentage of the RPSEA management team represents small, independent producer ranks.

The Committee took a coffee break at 9:30 a.m. and reconvened at 9:50 a.m.

Discussion of Recommendations

Ms. Zinke 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 that the Committee came to final conclusions in a timely fashion. The final recommendations of the full Committee are detailed in Attachment 3.

Solicitation Subcommittee

The first recommendation dealt with breadth of the unconventional resources solicitations, which the Committee felt should be more focused. The additional focus on water management, drilling, and completion practices was adopted. However, stimulation was added due to the importance of hydraulic fracturing. RPSEA added that of the 19 projects that were selected, 4 involve stimulation and fracturing. Also, the phrase “but not limited to” was inserted and intended to not exclude other important areas like geological and geophysical topics.

To make the overall processes more effective, it was suggested that the solicitations should also be coordinated with other DOE/federally funded programs. Also, it was agreed that solicitation guides should include wording that is more helpful to the researchers to understand the background and objectives of the RPSEA program. It should expand on the synergies with other related initiatives; e.g., NETL and traditional DOE R&D programs. The underlying challenge is to more effectively match potential respondents with upcoming RFPs. For example, it was felt that the overall research community can be better served and respond more efficiently to specific RPSEA proposals if members have a broader view of other related RFPs that are planned from other government agencies in the near term.

The second solicitation recommendation was split into two distinct items as it dealt with 1) encouraging consortium partnerships and 2) solicitation preparation. This comment arose that small producers did not appear to be as involved as they should have been in the solicitation process. Encouraging consortiums was then seen as a win-win solution because it drew on the strengths of each party to the benefit of the joint activity. Academia and service providers gained from industry’s experience while producers drew on the administrative strength of university staff in knowing how to effectively respond to RFPs. One example was given relating the experience in California involving two equally prestigious universities. One university included direct involvement of the end users in the development of the specific R&D programs and the other relied on in-house brainstorming.

It was found that the product from the former was successfully applied in the field and hailed by industry while the latter was not. This attested to the importance of establishing the collaborative approach between industry and academia. The DOE reminded the group that the analysis of the

solicitations provided by RPSEA since the last meeting revealed that a high level of collaboration already existed. Nonetheless, the Committee felt very strongly on this point and wanted to continue to reinforce this process-related objective. It was also possible that the collaboration noted in the RPSEA analysis focused on producers only involved in providing data to the researcher as opposed to the producer driving the R&D project. That was supported by comments that many R&D organizations are faced with pervasive challenges of pushing their results out to industry as compared to industry driving or pulling the R&D programs. Also, parallels were drawn to the agricultural R&D programs where in the early stages of program development, the farming industry votes on the applicability of the R&D to their needs. RPSEA pointed out that their procedures are quite similar in that the final project award decisions reflect input from producers who are heavily represented on the decision making bodies within RPSEA for that very reason.

The collaboration element of the first recommendation was adopted as it was clearly focused on the need to enhance the level of collaboration between pure researchers and industry. The intention was to secure cooperation from those entities that are experienced in preparing proposals with the small producers who may have novel ideas that they feel should be pursued to help reduce costs or resolve their exploration-/production-related challenges.

The second part of this recommendation dealt with the need to encourage consortiums to bring a higher level of value added to the process and the need to ensure that worthwhile projects are not rejected out of hand due to poorly written proposals or procedural issues involved with the solicitation process.

The last recommendation dealt with the apparent delays in making contract awards and expediting the actual R&D work. It was noted that in January 2008, the consortium had selected 19 projects for approval but by this meeting in March, 2008, none of these projects had yet been awarded. The Committee expressed frustration with the solicitation/award process delays. Although it could be argued that all of the people involved in the process were on a steep learning curve assimilating the federal procurement guidelines for reimbursable contracts and DOE internal regulations, and the fact the DOE had to be constantly mindful of the upcoming GAO audit implications, the Committee nonetheless voiced its concerns and encouraged the involved groups to proactively identify lessons learned and to make appropriate changes. It was also agreed that there should be a statement in the executive summary that addresses the “time and speed” issue as an important area that needs to be resolved.

The recommendation dealing with contract award procedures was largely adopted as originally intended; however, it was broadened to include the possible use of the Other Transactions Authority (see Section 1007 of EPAct 2005) as a means of enhancing the effectiveness and efficiency to the solicitations process. This might be of interest in some cases where seed grants are deemed of value for innovative technology development which otherwise would have a difficult time competing for funds within the bounds of the current contract award process. Also, this might be of value in evaluating alternative contract award mechanisms; i.e., fixed price vs. reimbursable. The Committee was somewhat cautious on adopting this recommendation as members were not very familiar with the specific language in Section 1007, so it was left somewhat vague. The DOE representatives assured the Committee that they understood the sensitivity to the issue and would follow up accordingly.

Technology Transfer Subcommittee

At 11:10 a.m., discussion of the Technology Transfer Subcommittee recommendations began.

The structure of the Subcommittee report was reorganized to more clearly distinguish the findings from the recommendations, similar to the structure of prior subcommittee recommendations.

The first recommendation provides a broad overview of the technology transfer challenge. The Committee suggested that RPSEA should adopt a more effective program to achieve the goals. Many Committee members echoed the opinion that the value of the R&D program is significantly undermined if the results are not transferred to all industry members in an effective manner. It was also agreed that the original wording was too strong of an indictment of the RPSEA program. The Committee agreed to reword the recommendation in a more positive tone and to orient the discussion toward the perceived shortfalls of the Plan as opposed to evaluating RPSEA's performance.

Regarding partnerships with existing tech transfer mechanisms, aside from encouraging the involvement of the Petroleum Technology Transfer Council (PTTC); it was recommended that consideration should be given to coordination of tech transfer between the consortium program and the DOE traditional programs, recognizing that potential application overlaps can exist. Also, the revised recommendation does not preclude the use of other effective mechanisms beside the PTTC. It was also acknowledged that the PTTC is already a RPSEA member.

The third recommendation deals with communication mechanisms. It was combined with the original fourth recommendation but the wording was modified to delete the reference to project funding for specific programs. It was agreed that the most effective technology transfer mechanisms are workshops, seminars, and demonstrations designed to heighten awareness of the program and its results. However, the RPSEA program does not directly include funds for standalone technology transfer and it was felt that leaving the technology transfer task to each individual project was not sufficient. Therefore a strong recommendation was made that a budget of at least $750,000 should be set aside to fund this activity from, for example, the NETL Complementary program. During the discussion, it was also pointed out that four Committee members also serve as board members of the PTTC, and, as noted earlier, PTTC is also a member of RPSEA. Geographical reach and/or regionalization were also pointed out as issues because in the past, tech transfer was developed within geographical or regional silos and the group wanted to ensure that these geographical boundaries were eliminated to foster broader, more effective programs.

The recommendation dealing with the establishment of a national database aimed at technology transfer was adopted.

The Committee broke for lunch at 12:00 p.m. and reconvened at 1:00 p.m.

The original best practice-related recommendations were reorganized into one item with particular emphasis on environmental topics.

It was agreed that several members of the Committee would develop the wording for a new recommendation dealing with possible new methods of achieving technology transfer, including privatization of the activity possibly to be funded by revenues generated from future patents. This could be a fruitful area for a new RFP. Subsequently, the group agreed to add wording in the solicitation section that suggested: "The program should include solicitation and research projects to develop innovative models for technology transfer."

Policy Subcommittee

At 1:20 p.m., the discussion shifted to the activities of the Policy Subcommittee.

It was agreed to separate out those recommendations dealing with the Plan approval process and the desire to link the Plan to the recently issued National Petroleum Council (NPC) 2007 Report "Hard Truths."

The Committee felt that there was a desire to achieve expeditious reviews in securing approval of the Plan with the end goal of improving the overall effectiveness and efficiency of the R&D programs. The recommendation dealing with the needless micromanagement and timeliness was edited to:

1) Distinguish policy matters (Administration/Office of Management and Budget [OMB] purview) from the technical issues (RPSEA/DOE/NETL/URTAC purview).
2) Solicit cooperation from non-DOE government entities to become more sensitive to the need to avoid funding discontinuities associated with fiscal year budgeting issues as these start/stop interruptions create havoc with the goal of managing these programs in a timely, effective, and efficient manner. This consideration is especially true because many of the program projects are multi-year efforts. Also, to illustrate the type of delays that are of concern to the Committee, last summer the Secretary made final recommendations on adopting last year's Annual Plan but funding did not become finally available for the NETL complementary research until November 2007.

On Page 4 of the findings section, the date 2016 was updated to 2014 in line with sunset provisions of the current Section 999 legislation.

A great deal of discussion focused on the desirability for additional funding and the needs of the independent producers. It was felt that it would be timely to table this consideration coincident with the upcoming administration change. Regarding the recommendation dealing with funding levels, wording was added to make the total $150 million contingent upon the continuing success of the program and not just an unconditional increase in program funding. It was pointed out by the DOE that the legislation provides for additional funding but the Committee also specified that oil and gas royalties should be used as the source of funding.

The Committee broke for coffee at 2:20 p.m. and reconvened at 2:45 p.m.

The recommendation dealing with the duration of the program was amended to note 2017 instead of 2016 as the last year of the program, consistent with the understood intention of Congress.

The recommendations dealing with the geographic reach of the program and reference to the NPC report on "Hard Truths" were adopted as originally worded.

Other Petroleum Subcommittee

At 3:40 p.m., the Other Petroleum Subcommittee recommendations were discussed.

The Subcommittee recommendations were largely accepted as presented except for the following considerations:

Recommendation 1 implies that the DOE is not currently involved in assessing other domestic onshore petroleum resources, which is not correct. Hence, the wording was change to "continue to review."

For recommendation 3, the reference to a purely upstream play was expanded to clarify that it refers to resources developed by purely independent upstream companies that do not benefit from vertical industry integration; i.e., having access or ownership in pipeline or refining facilities. Compared to a fully integrated company, the economics of the purely upstream play could be penalized due to the limited operations, and hence the unconventional resources R&D program has added value to independent oil companies. These factors should be taken into account by the DOE in establishing the future direction of the unconventional program in 2009 and beyond.

- For example, to highlight the issue as it applies in California compared to Western Canada, in California the differential of WTI equivalent compared to heavy oil value is in the range of $10/Bbl whereas in Canada it is in the range of $25/Bbl. The reason for lower net value (or higher differential) in Canada is the lack of refining infrastructure in the vicinity of heavy oil production; whereas in California, ample refining capacity exists with a high level of heavy oil conversion capacity and thus the heavy oil value has a lower differential from WTI.

Finally, a new recommendation was added which noted a desire on the part of industry for the DOE to be more actively involved in helping industry to resolve local issues. These were found to have worked effectively in the past (e.g., in Southern California). The DOE's more global view of energy issues has been essential in helping to resolve thorny local issues dealing with unconventional resources. In the past, the DOE had an outreach program that involved field representatives who would facilitate discussion of local matters (state and regional) to help resolve difficult issues by providing a broad, balanced, and more national or global perspective on energy-related issues. It was understood that due to DOE internal budgetary constraints, this activity has been scaled back significantly or possibly eliminated.

At 4:20 p.m., the Committee turned its attention to the matter of the Executive Summary.

Executive Summary Discussions

It was proposed that the Committee authorize the Editing Committee to use the concepts and wording developed by the subcommittees in drafting the executive summary. The Editing Committee scheduled to meet on March 5 to prepare the draft letter to the Secretary. The product of the Editing Committee would be issued to the Committee for review prior to the final voting on the letter to the Secretary.

Also, it was proposed to use the following sentence to reinforce the environmental issues in the Executive Summary:

> "The oil and gas research and development program provides the nation with an opportunity to meet the current and future energy demands by providing a sustainable bridge as other energy resources are developed."

Another item that was reiterated related to the Committee's desire to incorporate time and speed considerations in the work plan for initiating R&D projects. The Committee felt that it was essential that the solicitation and contract award procedures be streamlined to allow the program to progress as rapidly as possible. Notwithstanding the growing pains associated with the implementation of a new program involving new procedures, the Committee recommended that a lessons learned type of approach be used to identify and rectify procedural roadblocks.

At 4:30 p.m., the subject of the Editing Subcommittee work schedule was discussed, leading to the planned conference call on March 13.

Instructions to the Editing Subcommittee

Next, the procedure for finalizing the letters was discussed. The DOE reviewed the schedule and instructions for the conference call scheduled for Thursday, March 13. The purpose of the conference call is for the Committee to officially review and endorse the Letter to the Secretary and the Committee's final report. The Committee will receive the Editing Committee's output prior to that meeting so that the Committee will have an opportunity to voice any concerns or suggest any final edits prior to the conference call. It would not be appropriate to discuss further changes or edits or rewording at the conference call; those should all be resolved prior to the Thursday meeting.

Next Steps

Starting at 4:35 pm, Ms. Elena Melchert reviewed the plans for appointing new members to URTAC. She referenced the letter issued by Mr. Slutz on February 28, 2008, as shown in Attachment 4. Resumes were requested by May 7. 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 Secretary of Energy, with review from 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 Comments and Adjournment

Mr. DeHoratiis called for public comments and as none were offered, the meeting was adjourned at 4:45 pm.

Attachment Contents Page

Attachment 1

Agenda
Unconventional Resources Technology Advisory Committee
Hilton Alexandria Old Town, 1767 King Street, Alexandria, Virginia
March 4, 2008

7:00 Registration and Continental Breakfast

8:00 **Welcome and 'Safety Minute'** [Sally Zinke, Chair]

8:10 **Opening Remarks** [Guido DeHoratiis, Acting Designated Federal Officer]

8:30 **Subcommittee Reports** [Facilitator]

Subcommittee Chair presents Subcommittee report

Subcommittee Leaders				
Solicitation	**Tech. Transfer**	**Policy**	**Other Petroleum**	**Content Technology Gaps**
Sally Z.	Chris H.	Fred J.	Vikram R	James 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 into the cover letter.

10:00 Break

10:15 **Discussion of Recommendations** [Facilitator]
Solicitation -- Technology Transfer -- Policy -- Other Petroleum
Content Technology Gaps
Committee discussion on content and wording of recommendations; Identify level agreement on recommendations as necessary. (Consensus vs. Majority Agreement vs. Minority Opinion)

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** [Sally Zinke]
Review content and key messages

4:00 **Instructions to the Editing Subcommittee** [Sally Zinke]

4:15 **Next Steps**
March 13th Meeting via conference call [Elena Melchert, Committee Manager]
2010 Advisory Committee

4:30 **Public Comment** [Guido DeHoratiis]

5:00 **Adjourn** [Guido DeHoratiis]

APPROVED: _____ 2-29-08
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

Solicitation Subcommittee Recommendations

Unlike DOE components, RPSEA will not be sole-sourcing with national laboratories. Rather, RPSEA will be reaching out to many new potential oil and gas research and development participants, including oil and gas producers, academic, non-profit, and groupings many of whose members have not had occasion to follow DOE/NETL contracting and accounting requirements. It is important that oil and gas producers have opportunities to seek research solutions to problems that they are faced with. And it is a vital goal to engage many research professionals, including students and faculty members given a chance to work with industry on projects of both academic and industry merit, who may replenish in time our Nation's oil and gas research and development capabilities.

Recommendations

- The solicitation for the Unconventional Reservoir projects was extremely broad. The 2008 plan should increase its solicitation focus on the areas which, due to the response to the 2007 solicitation, are under addressed, including (but not limited to) water management and possibly drilling, stimulation and completion practices. Creating a balanced portfolio of projects is critical. The solicitation should provide information that guides prospective respondents in an effective way. Consideration should be given to coordinating the solicitation with other solicitations within the traditional DOE program and other federally funded programs.

- It is important to encourage collaborative efforts between producers and partners (e.g., universities, service companies) at the outset of writing the proposals, especially proposals that address opportunities for creating value for producers. National organizations such as PTTC, AAPG, SPE, SEG, IPAA, API and others should be enlisted to provide marketing and support for the solicitation process including establishing a clearinghouse (e.g., website) to match potential researchers with technology providers and producers.

- The 2008 plan needs to ensure that all solicitations are considered and consortiums are encouraged by the application process. Either through workshops, pre-solicitation advice, proposal writing seminars or other means, researchers need to be encouraged to respond and assisted with proposal preparation in order to ensure high quality proposals that are not disqualified for technicalities.

- RPSEA, NETL, and DOE HQ should objectively assess what dividends the Section 999 program might reap from greater flexibility in solicitation and contract negotiation. They should consider seeking DOE exceptional approval outside the conventional practice under regulations in some of their awards to include fixed price contracts, as well as considering applying instruments for the purpose of encouraging innovative research that would not fit within the current framework.[1]

- The Program should include solicitation of research projects to develop innovative models for technology transfer.

[1] such as the "Other Transactions Authority" of EPAct Section 1007 if appropriate

For cover letter:

- In an effort to create a balanced portfolio, the 2008 plan needs to target research areas such as water management and drilling and completion practices which under subscribed in 2007.
- To ensure that all solicitations are considered and consortiums are not discouraged by the application process, DOE need to be proactive about simplifying the process with workshops, pre-solicitation advice, proposals writing seminars or other means.
- It is necessary to provide supplementary communication through national organizations such as PTTC, AAPG, SPE, SEG, IPAA, API and others to provide marketing and support for the solicitation process including establishing a clearinghouse to match potential researchers with technology providers and producers.
- RPSEA, NETL, and DOE HQ should consider seeking DOE approval to move outside the current regulations in some of their awards to include fixed price contracts from greater flexibility in solicitation and contract negotiation.

February 25, 2008

TECHNOLOGY TRANSFER SUB-GROUP RECOMMENDATIONS

Without an effective Technology Transfer (TT) component, any R&D program will have limited success with only those conducting the R&D program deriving any real benefit. It is unlikely that funding for these programs would be awarded unless there was to be an effective and far reaching TT component to leverage the investment.

Technology transfer (TT) must be designed as a fundamental part of any Research and Development program; all too often it is left as an afterthought to be dealt with at the end of the program. The fact is that TT requirements must be planned before any R&D grants are awarded Any technology transfer effort that is left at the end of projects usually has very limited dissemination and has marginal benefit at best. This is the reason why most such efforts have been failures. It takes a considerable investment of time and resources to design and implement an effective TT conduit to the industry end users.

The focus of the Small Producer component of the URTAC program is R&D project grants. This is despite the fact that based on the experience of the Petroleum Technology Transfer Program (PTTC) (a partnership program between DOE and oil producers). The focus of the RPSEA program needs to recognize this fact and reallocate its resources as best it can.

The RPSEA R&D projects provide that 2.5% of the funding be used for technology transfer. While this amount was low, it was probably sufficient for reporting the status and results of the individual projects. However, this level of funding is woefully inadequate for funding a successful and effective Technology Transfer program.

URTAC TECHNOLOGY TRANSFER PROGRAM ELEMENTS:

The Technology Transfer component of the RPSEA program should have the following elements:

- For any R&D program to be successful, its TT component must be implemented early, coordinated and used often. The 2008 Plan should include a strong, timely, proactive technology transfer framework.
- Partnerships with existing TT mechanisms, especially recognized programs such as the Petroleum Technology Transfer Council (PTTC), should be encouraged thereby ensuring that they will be in place to carry out the TT needs of the program. Consideration should be given to coordination of TT between the Consortium program and DOE traditional R&D programs.
- A principle need of Small Producers is Technology Transfer in the form of workshops, seminars and demonstrations. Funding needs to be specifically allocated for Technology Transfer independent of the specific projects or else it will not be done in an effective manner. The current Plan does not provide for this. A strong recommendation is to supplement funding from other sources such as the NETL Complementary Program, so that at least $750,000 is set aside for overall technology transfer dissemination.
- The results of any research projects must be captured and preserved as part of a national database available to everyone. This will maximize the benefit of the R&D program funds invested.
- The Program needs to identify, capture and document Best Practices identified during the R&D projects so that they can be incorporated into the TT program. Special emphasis should be placed on identifying Best Practices in critical areas such as environmental protection (including minimizing footprint and conserving or mitigating for biodiversity impacts) and reduction of wastes.

Comments:

- Researchers need to provide results in an understandable format that is useful to small operators who do not have research or large professional staffs.
- Research project guidelines need to clearly define how technology transfer is to be accomplished; TT efforts should not be limited to published papers in highly technical journals and websites. It needs to be pushed to producers who will benefit from its implementation.
- Researchers need to have a clear understanding that technology transfer needs to be at least partially funded by their research contract; and that the effective accomplishment of this component determines whether or not their project was a success.

DRAFT POLICY SUB-COMMITTEE REPORT

Policy Findings:

(1) Public investment in oil and natural gas research and development can yield the USA high value returns for decades because –

(a) the need for natural gas and oil is not going away since oil and gas will supply most of our energy needs – as components of a sustainable energy portfolio – for a long time during this century's transition to alternative fuels and fuel use technologies;

(b) but we must have trained workforce in order to secure oil and gas supplies, and the challenge to replenish USA technical oil and gas workforce – slashed 60 percent between 1986 and 2000 as reported by the Interstate Oil & Gas Compact Commission (Wall Street Journal, Feb. 21, 2008, page B1) – is not going away either;

(c) robust R&D into exploration, development, and production technologies relevant to USA oil and natural gas resources will provide important opportunities to help train needed technical workforce to tap our resources, whereas without such R&D domestic production and delivery of oil and gas could diminish rapidly, leaving our economy and security increasingly dependent on oil and liquefied natural gas imports;

(d) robust R&D into technologies for exploiting domestic *unconventional* resources of natural gas and other petroleum holds great promise and is particularly important to USA policy in light of the greater maturity of petroleum industry activities here as compared to most other countries;

(e) such robust R&D can foster a better environmental footprint in connection with use of USA resources and lead the world to better environmental practices with technology transfer to industry in other countries;

(f) R&D activities of national oil companies and the major investor-owned oil and gas companies are unlikely to focus on onshore, unconventional opportunities that could be turned into meaningful production over the next couple of decades;

(g) industry, in the case of onshore domestic resources, means primarily independent oil and gas firms – that drilled 90 percent of USA oil and gas wells and produced 82 percent of natural gas and 68 percent of oil in the USA, as the Independent Petroleum Association of America testified on October 31, 2007;

(h) independents traditionally invest their cash flow into development of onshore reserves, yet they will respond to a government-initiated opportunity presented by the new EPAct Section 999 program (as current experience shows), to join with academia in government-sponsored research and development with technology transfer;

(i) if the Federal government will lead, much more research will happen.

(2) A new report by the National Petroleum Council reinforces several key findings.

- It reviews energy risks and challenges in worldwide contexts;
- it relates Federally-sponsored oil and gas R&D to training of technical personnel;

- it stresses implications of the relative maturity of USA resources; and
- it identifies opportunities to advance technology through 2030 -- onshore and offshore, domestic and international, in mature and frontier areas.

FACING THE HARD TRUTHS ABOUT ENERGY: A Comprehensive View to 2030 of Global Oil and Natural Gas, 2007, posted at www.npchardtruthsreport.org (hereafter NPC 2007). NPC 2007 was prepared at the request of the Secretary of Energy with inputs from industry, government, and academia.

(a) NPC 2007 documents a downward trend in Federal funding for oil and gas R&D (graphed at page 176, Fig. 3-5):

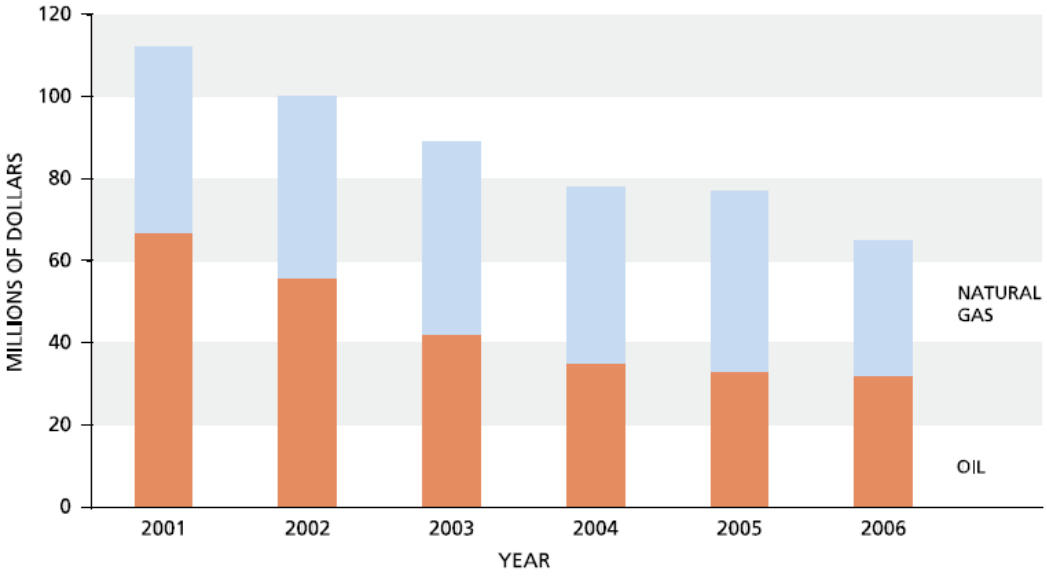

Figure T-III.1. Oil and natural gas R&D funds provided by the U.S. government.

(b) NPC 2007 explains workforce-related consequences of that trend:

> Department of Energy monies have been a significant funding source for U.S. universities and national laboratories. This funding is particularly important, as it enables students to pursue advanced degrees that are relevant and vital to our country's energy future. One of the most significant issues facing the U.S. energy industry is a critical shortage of engineers and scientists. This stems from the cyclical nature of the industry and by public perceptions, as well reductions in the number of U.S. petroleum and geoscience degree departments, and industry demographics. More than 50 percent of the industry's current technical workforce is eligible for retirement within the next decade, creating an experience and skill shortage at a time when demand will be increasing. Solving this problem will require cooperation among federal and state governments, academia, and industry if the United States is to continue is historical leadership in oil and natural gas technology development. [NPC 2007, page 173]

The Committee believes that EPAct Section 999 programs can lead to such cooperation.

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The Committee believes these technology requirements often relate to *unconventional* and quite challenging resources that are commonly addressed only after easier pickings. Such new technologies, once developed, lend themselves to export around the world.

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(ii) Adding a second $50 million to the program for one year; and

(iii) Eliminating needless reviews by the Office of Management and Budget (OMB) by deleting a Section 999 requirement for transmittals of each year's annual plan to Congress. (The FY2007 plan, approved August 1, 2007, by the Secretary of Energy and printed in the Federal Register for all to read, was not cleared by OMB for formal transmittal to Congress until February 4, 2008.)

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(7) If steadily implemented, Section 999 can provide a minimal certainty of funding that is an essential component for an efficient and effective long-term R&D program which the Committee strongly believes is in the national interest.

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- respect the technical expertise of the industry and academic contributions that are reflected in the Plan and limit its reviews to policy issues,
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(3) Geographic reach of Section 999 program. The Committee strongly recommends that the program reach out broadly to all oil and gas producing regions of the United States.

Supporting Comments:

The USA is blessed with large onshore resources of natural gas and oil that are not economically accessible today but could become accessible on meaningful timetables, if government and industry make adequate investments in R&D and technology transfer.

Developing reserves in the USA will meet high environmental standards and provide leadership for other countries on how to develop resources most benignly.

National oil companies are committing more of their national resources to their own development plans rather than export. The USA needs to develop its own resources.

Proving up USA onshore resources and bringing them into production more rapidly could yield enormous public benefits – worth hundreds of billions of dollars a year – in terms of national security, reduced imports, and more favorable balance of payments, less dependence on foreign nationally-owned oil companies, high-quality science and technology jobs in the USA and research opportunities for faculty and students at American universities, income to workers and royalty owners (private, state and local royalty owners, as well as Federal royalty owners), and consequently tax revenues.

If the Federal government provides this leadership, it can make sure that the research our country needs will happen, knowing that industry and academia will join in response to opportunities and challenges government sponsorship will offer.

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DRAFT URTAC EXECUTIVE SUMMARY INSERT [as edits to last year's report]

2.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

Executive Summary Introduction

Oil and natural gas will remain indispensable to meeting the projected domestic energy demand. The U.S. is blessed with large unconventional onshore resources of natural gas and oil, which when developed in a sustainable fashion will enhance domestic energy security. Independents drill 90 percent of the oil and gas wells and produce 82 percent of the Nation's natural gas and 68 percent of the oil. These independents are faced with unique and ever more difficult technical challenges in developing new unconventional resources, yet they lack the resources to undertake R&D programs. Therefore, the Federal government has a responsibility to provide leadership and to help fund and disseminate the results of research and development (R&D) programs for public benefit. The Section 999 Program can materially contribute to U.S. supply of oil and gas both today and beyond the current EPAct 10 year R&D horizon directly and by improving the capabilities of the technical workforce. The resource potential impacted by this technology program is significant and of major importance to the Nation; exportable technologies stimulated by this program could help other countries. There is a critical need for a sustainable and consistent approach to the technology challenges facing unconventional resource development. If the Federal

government will lead, industry and academia will respond, and much more research will happen (see appendix X for more details).

* * *

Recommendations: [fn: See Section 3.0 for detailed recommendations.]
The committee recommends:

- Policy:
  - RPSEA, NETL, and DOE headquarters should weigh NPC 2007, Chapter 3 (Technology) as regards their Annual Plans for FY2008 and FY2009.
  - Congress should ultimately amend Section 999 to extend the program to 2030 – the full time frame covered by NPC 2007 – and promptly clarify that, pending such extension, the current program will last through 2016 (and not be cut off in 2014).
  - Congress should ultimately amend Section 999 to raise annual funding from the $50 million level now set by EPAct to $150 million. As an interim stage for FY 2009, Congress should raise funding to $100 million.
  - No Section 999 funds should be diverted from intended R&D programs.
  - The Office of Management and Budget should avoid micromanaging the Section 999 program (a) by reducing needless reviews and (b) by working with Congress and DOE to catch up on delayed grant cycles.
  - RPSEA and NETL should aim for broad geographic program reach to all oil and gas producing regions of the United States.

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DRAFT URTAC CHAIR'S TRANSMITTAL LETTER INSERT [as edits to last year's letter]

Dear Mr. Secretary:

* * *

Findings:
Successful execution of this research and development (R&D) program will materially contribute to U.S. supply of oil and gas both today and beyond the current EPAct 10 year R&D horizon – both directly and by training sorely needed technical workforce. It is the consensus of this Committee that the resource potential impacted by this technology program is significant and of major importance to the Nation and that exportable technologies stimulated by this program could help other countries, including emerging economies, satisfy electrification goals in environmentally-attractive ways. There is a critical need for a sustainable and consistent approach to the technology challenges facing unconventional resource development, including training of technical workforce, – challenges explained by last year's National Petroleum Council report, FACING THE HARD TRUTHS ABOUT ENERGY (NPC 2007). If the Federal government will lead, industry and academia will respond, and much more research will happen.

* * *

Recommendations:
The committee recommends:

- Policy:
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    - Congress should ultimately amend Section 999 to extend the program to 2030 – the full time frame covered by NPC 2007 – and promptly clarify the existing program to assure against a premature cut off in 2014.
    - Congress should ultimately amend Section 999 to raise annual funding from the $50 million level now set by EPAct to $150 million. As an interim stage for FY 2009, Congress should raise funding to $100 million.
    - The Office of Management and Budget should reduce needless reviews.
    - RPSEA and NETL should aim for broad geographic program reach to all oil and gas producing regions of the United States.

Preliminary Report of the Subcommittee on Other Petroleum Resources

Whereas,

1. Studies suggest a very material US domestic onshore resource base in heavy oil and tar sands. A recent report commissioned by the DOE, and prepared by the Institute for Clean and Secure Energy at the University of Utah, details the location of much of the resource base. Excluding Alaska, over 75 billion barrels oil in place have been identified, and states such as Alabama, with no more modest current petroleum footprints, are identified as viable areas of production.

2. Additionally, a significant increase in the activity and production associated with the Bakken shale in North Dakota and Montana indicate potentially very large reserves associated with high quality oils in unconventional settings.

3. These facts are not well known in a world where attention has been drawn to other major known resources in other locations such as Canada or other less mature, albeit potentially giant, resource types like shale oil and gas hydrates.

4. Heavy and unconventional oil resources might be developable on shorter time horizons than shale oil. This is because the deposits are shallow and production methods are a shorter step-out from existing technology.

5. Support for this belief is to be found in recent announcements by small independents regarding both heavy oil and fractured shale oil ventures

6. Accelerated and sustainable development of this material resource, when properly quantified, is in the US national interest

We recommend that ...

1. As part of the planning process for the 2009 Section 999 plans (both RPSEA and Complementary Programs), the DOE planning team a) continue to review existing summary assessments on the domestic onshore “other petroleum” resource base inclusive of but not necessarily limited to heavy oil and tar sands, and fractured oil shales, and b) identify an initial set of technology gaps that would advance activities in this area.

2. Pending the outcome of this summary assessment review and identified technology gaps, plan to include activities designed to address these technology gaps in the 2009 RPSEA solicitation and/or the 2009 Complementary program.

3. The DOE study take into account and document a) those considerations that make a pure upstream play (i.e., plays being developed by independents that do not have pipelines or refineries) economically hampered, such as the heavy oil differential, and b) the additional environmental burden of heavy oil, including the carbon penalty and water usage.

4. The DOE needs to be actively involved in Federal, state and regional decision-making processes that may result in regulations that impact development of oil and gas resources, to ensure that larger national energy needs are taken into account.

Attachment 3

Solicitation Recommendations

Unlike DOE components, RPSEA will not be sole-sourcing with national laboratories. Rather, RPSEA will be reaching out to many new potential oil and gas research and development participants, including oil and gas producers, academic, non-profit, and groupings many of whose members have not had occasion to follow DOE/NETL contracting and accounting requirements. It is important that oil and gas producers have opportunities to seek research solutions to problems that they are faced with. And it is a vital goal to engage many research professionals, including students and faculty members given a chance to work with industry on projects of both academic and industry merit, who may replenish in time our Nation's oil and gas research and development capabilities.

Recommendations

- The solicitation for the Unconventional Reservoir projects was extremely broad. The 2008 plan should increase its solicitation focus on the areas which, due to the response to the 2007 solicitation, are under addressed, including (but not limited to) water management and possibly drilling, stimulation and completion practices. Creating a balanced portfolio of projects is critical. The solicitation should provide information that guides prospective respondents in an effective way. Consideration should be given to coordinating the solicitation with other solicitations within the traditional DOE program and other Federally funded programs.

- It is important to encourage collaborative efforts between producers and partners (e.g., universities, service companies) at the outset of writing the proposals, especially proposals that address opportunities for creating value for producers. National organizations such as PTTC, AAPG, SPE, SEG, IPAA, API and others should be enlisted to provide marketing and support for the solicitation process including establishing a clearinghouse (e.g., website) to match potential researchers with technology providers and producers.

- The 2008 plan needs to ensure that all solicitations are considered and consortiums are encouraged by the application process. Either through workshops, pre-solicitation advice, proposal writing seminars or other means, researchers need to be encouraged to respond and assisted with proposal preparation in order to ensure high quality proposals that are not disqualified for technicalities.

- RPSEA, NETL, and DOE HQ should objectively assess what dividends the Section 999 program might reap from greater flexibility in solicitation and contract negotiation. They should consider seeking DOE exceptional approval outside the conventional practice under regulations in some of their awards to include fixed price contracts, as well as considering applying instruments for the purpose of encouraging innovative research that would not fit within the current framework.[2]

- The Program should include solicitation of research projects to develop innovative models for technology transfer.

[2] such as the "Other Transactions Authority" of EPAct Section 1007 if appropriate

For cover letter:

- In an effort to create a balanced portfolio, the 2008 plan needs to target research areas such as water management and drilling and completion practices which under subscribed in 2007.
- To ensure that all solicitations are considered and consortiums are not discouraged by the application process, DOE need to be proactive about simplifying the process with workshops, pre-solicitation advice, proposals writing seminars or other means.
- It is necessary to provide supplementary communication through national organizations such as PTTC, AAPG, SPE, SEG, IPAA, API and others to provide marketing and support for the solicitation process including establishing a clearinghouse to match potential researchers with technology providers and producers.
- RPSEA, NETL, and DOE HQ should consider seeking DOE approval to move outside the current regulations in some of their awards to include fixed price contracts from greater flexibility in solicitation and contract negotiation.

February 25, 2008

TECHNOLOGY TRANSFER SUB-GROUP RECOMMENDATIONS

Without an effective Technology Transfer (TT) component, any R&D program will have limited success with only those conducting the R&D program deriving any real benefit. It is unlikely that funding for these programs would be awarded unless there was to be an effective and far reaching TT component to leverage the investment.

Technology transfer (TT) must be designed as a fundamental part of any Research and Development program; all too often it is left as an afterthought to be dealt with at the end of the program. The fact is that TT requirements must be planned before any R&D grants are awarded Any technology transfer effort that is left at the end of projects usually has very limited dissemination and has marginal benefit at best. This is the reason why most such efforts have been failures. It takes a considerable investment of time and resources to design and implement an effective TT conduit to the industry end users.

The focus of the Small Producer component of the URTAC program is R&D project grants. This is despite the fact that based on the experience of the Petroleum Technology Transfer Program (PTTC) (a partnership program between DOE and oil producers). The focus of the RPSEA program needs to recognize this fact and reallocate its resources as best it can.

The RPSEA R&D projects provide that 2.5% of the funding be used for technology transfer. While this amount was low, it was probably sufficient for reporting the status and results of the individual projects. However, this level of funding is woefully inadequate for funding a successful and effective Technology Transfer program.

URTAC TECHNOLOGY TRANSFER PROGRAM ELEMENTS:

The Technology Transfer component of the RPSEA program should have the following elements:

- For any R&D program to be successful, its TT component must be implemented early, coordinated and used often. The 2008 Plan should include a strong, timely, proactive technology transfer framework.
- Partnerships with existing TT mechanisms, especially recognized programs such as the Petroleum Technology Transfer Council (PTTC), should be encouraged thereby ensuring that they will be in place to carry out the TT needs of the program. Consideration should be given to coordination of TT between the Consortium program and DOE traditional R&D programs.
- A principle need of Small Producers is Technology Transfer in the form of workshops, seminars and demonstrations. Funding needs to be specifically allocated for Technology Transfer independent of the specific projects or else it will not be done in an effective manner. The current Plan does not provide for this. A strong recommendation is to supplement funding from other sources such as the NETL Complementary Program, so that at least $750,000 is set aside for overall technology transfer dissemination.
- The results of any research projects must be captured and preserved as part of a national database available to everyone. This will maximize the benefit of the R&D program funds invested.
- The Program needs to identify, capture and document Best Practices identified during the R&D projects so that they can be incorporated into the TT program. Special emphasis should be placed on identifying Best Practices in critical areas such as environmental protection (including minimizing footprint and conserving or mitigating for biodiversity impacts) and reduction of wastes.

Comments:

- Researchers need to provide results in an understandable format that is useful to small operators who do not have research or large professional staffs.
- Research project guidelines need to clearly define how technology transfer is to be accomplished; TT efforts should not be limited to published papers in highly technical journals and websites. It needs to be pushed to producers who will benefit from its implementation.
- Researchers need to have a clear understanding that technology transfer needs to be at least partially funded by their research contract; and that the effective accomplishment of this component determines whether or not their project was a success.

DRAFT POLICY SUB-COMMITTEE REPORT

Policy Findings:

(1) Public investment in oil and natural gas research and development can yield the USA high value returns for decades because –

(a) the need for natural gas and oil is not going away since oil and gas will supply most of our energy needs – as components of a sustainable energy portfolio – for a long time during this century's transition to alternative fuels and fuel use technologies;

(b) but we must have trained workforce in order to secure oil and gas supplies, and the challenge to replenish USA technical oil and gas workforce – slashed 60 percent between 1986 and 2000 as reported by the Interstate Oil & Gas Compact Commission (Wall Street Journal, Feb. 21, 2008, page B1) – is not going away either;

(c) robust R&D into exploration, development, and production technologies relevant to USA oil and natural gas resources will provide important opportunities to help train needed technical workforce to tap our resources, whereas without such R&D domestic production and delivery of oil and gas could diminish rapidly, leaving our economy and security increasingly dependent on oil and liquefied natural gas imports;

(d) robust R&D into technologies for exploiting domestic *unconventional* resources of natural gas and other petroleum holds great promise and is particularly important to USA policy in light of the greater maturity of petroleum industry activities here as compared to most other countries;

(e) such robust R&D can foster a better environmental footprint in connection with use of USA resources and lead the world to better environmental practices with technology transfer to industry in other countries;

(f) R&D activities of national oil companies and the major investor-owned oil and gas companies are unlikely to focus on onshore, unconventional opportunities that could be turned into meaningful production over the next couple of decades;

(g) industry, in the case of onshore domestic resources, means primarily independent oil and gas firms – that drilled 90 percent of USA oil and gas wells and produced 82 percent of natural gas and 68 percent of oil in the USA, as the Independent Petroleum Association of America testified on October 31, 2007;

(h) independents traditionally invest their cash flow into development of onshore reserves, yet they will respond to a government-initiated opportunity presented by the new EPAct Section 999 program (as current experience shows), to join with academia in government-sponsored research and development with technology transfer;

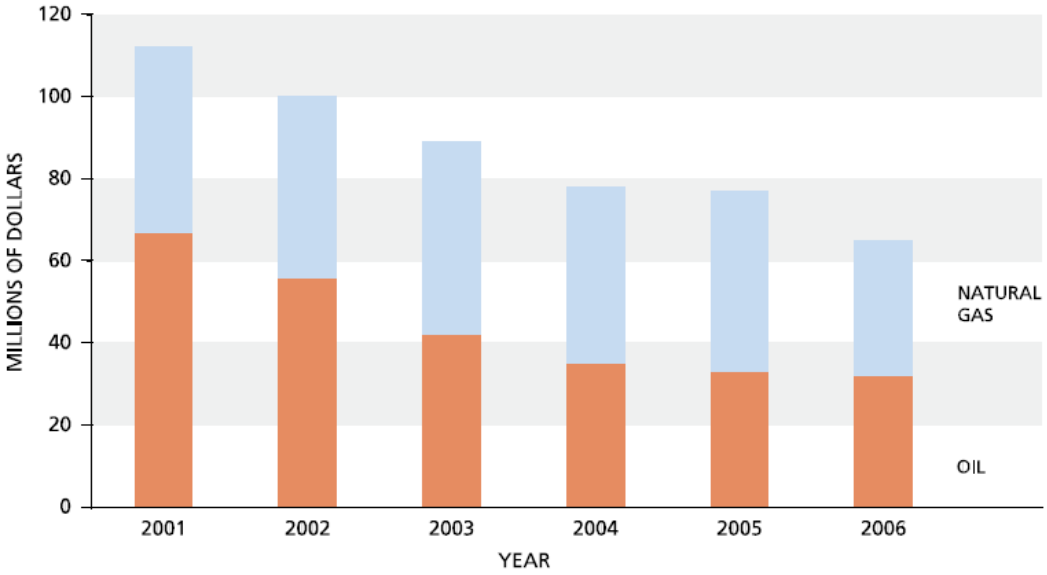
(i) if the Federal government will lead, much more research will happen.

(2) A new report by the National Petroleum Council reinforces several key findings.

- It reviews energy risks and challenges in worldwide contexts;
- it relates Federally-sponsored oil and gas R&D to training of technical personnel;
- it stresses implications of the relative maturity of USA resources; and
- it identifies opportunities to advance technology through 2030 -- onshore and offshore, domestic and international, in mature and frontier areas.

FACING THE HARD TRUTHS ABOUT ENERGY: A Comprehensive View to 2030 of Global Oil and Natural Gas, 2007, posted at www.npchardtruthsreport.org (hereafter NPC 2007). NPC 2007 was prepared at the request of the Secretary of Energy with inputs from industry, government, and academia.

(a) NPC 2007 documents a downward trend in Federal funding for oil and gas R&D (graphed at page 176, Fig. 3-5):



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3.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

Executive Summary Introduction

Oil and natural gas will remain indispensable to meeting the projected domestic energy demand. The U.S. is blessed with large unconventional onshore resources of natural gas and oil, which when developed in a sustainable fashion will enhance domestic energy security. Independents drill 90 percent of the oil and gas wells and produce 82 percent of the Nation's natural gas and 68 percent of the oil. These independents are faced with unique and ever more difficult technical challenges in developing new unconventional resources, yet they lack the resources to undertake R&D programs. Therefore, the Federal government has a responsibility to provide leadership and to help fund and disseminate the results of research and development (R&D) programs for public benefit. The Section 999 Program can materially contribute to U.S. supply of oil and gas both today and beyond the current EPAct 10 year R&D horizon directly and by improving the capabilities of the technical workforce. The resource potential impacted by this technology program is significant and of major importance to the Nation; exportable technologies stimulated by this program could help other countries. There is a critical need for a sustainable and consistent approach to the technology challenges facing unconventional resource development. If the Federal

government will lead, industry and academia will respond, and much more research will happen (see appendix X for more details).

* * *

Recommendations: [fn: See Section 3.0 for detailed recommendations.]
The committee recommends:

- Policy:
  - RPSEA, NETL, and DOE headquarters should weigh NPC 2007, Chapter 3 (Technology) as regards their Annual Plans for FY2008 and FY2009.
  - Congress should ultimately amend Section 999 to extend the program to 2030 – the full time frame covered by NPC 2007 – and promptly clarify that, pending such extension, the current program will last through 2016 (and not be cut off in 2014).
  - Congress should ultimately amend Section 999 to raise annual funding from the $50 million level now set by EPAct to $150 million. As an interim stage for FY 2009, Congress should raise funding to $100 million.
  - No Section 999 funds should be diverted from intended R&D programs.
  - The Office of Management and Budget should avoid micromanaging the Section 999 program (a) by reducing needless reviews and (b) by working with Congress and DOE to catch up on delayed grant cycles.
  - RPSEA and NETL should aim for broad geographic program reach to all oil and gas producing regions of the United States.

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DRAFT URTAC CHAIR'S TRANSMITTAL LETTER INSERT [as edits to last year's letter]

Dear Mr. Secretary:

* * *

Findings:
Successful execution of this research and development (R&D) program will materially contribute to U.S. supply of oil and gas both today and beyond the current EPAct 10 year R&D horizon – both directly and by training sorely needed technical workforce. It is the consensus of this Committee that the resource potential impacted by this technology program is significant and of major importance to the Nation and that exportable technologies stimulated by this program could help other countries, including emerging economies, satisfy electrification goals in environmentally-attractive ways. There is a critical need for a sustainable and consistent approach to the technology challenges facing unconventional resource development, including training of technical workforce, – challenges explained by last year's National Petroleum Council report, FACING THE HARD TRUTHS ABOUT ENERGY (NPC 2007). If the Federal government will lead, industry and academia will respond, and much more research will happen.

* * *

Recommendations:
The committee recommends:

- Policy:
    - RPSEA, NETL, and DOE headquarters should weigh NPC 2007, Chapter 3 (Technology) as regards their Annual Plans for FY2008 and FY2009.
    - Congress should ultimately amend Section 999 to extend the program to 2030 – the full time frame covered by NPC 2007 – and promptly clarify the existing program to assure against a premature cut off in 2014.
    - Congress should ultimately amend Section 999 to raise annual funding from the $50 million level now set by EPAct to $150 million. As an interim stage for FY 2009, Congress should raise funding to $100 million.
    - The Office of Management and Budget should reduce needless reviews.
    - RPSEA and NETL should aim for broad geographic program reach to all oil and gas producing regions of the United States.

Preliminary Report of the Subcommittee on Other Petroleum Resources

Whereas,

1. Studies suggest a very material US domestic onshore resource base in heavy oil and tar sands. A recent report commissioned by the DOE, and prepared by the Institute for Clean and Secure Energy at the University of Utah, details the location of much of the resource base. Excluding Alaska, over 75 billion barrels oil in place have been identified, and states such as Alabama, with no more modest current petroleum footprints, are identified as viable areas of production.

2. Additionally, a significant increase in the activity and production associated with the Bakken shale in North Dakota and Montana indicate potentially very large reserves associated with high quality oils in unconventional settings.

3. These facts are not well known in a world where attention has been drawn to other major known resources in other locations such as Canada or other less mature, albeit potentially giant, resource types like shale oil and gas hydrates.

4. Heavy and unconventional oil resources might be developable on shorter time horizons than shale oil. This is because the deposits are shallow and production methods are a shorter step-out from existing technology.

5. Support for this belief is to be found in recent announcements by small independents regarding both heavy oil and fractured shale oil ventures

6. Accelerated and sustainable development of this material resource, when properly quantified, is in the US national interest

We recommend that ...

1. As part of the planning process for the 2009 Section 999 plans (both RPSEA and Complementary Programs), the DOE planning team a) continue to review existing summary assessments on the domestic onshore “other petroleum” resource base inclusive of but not necessarily limited to heavy oil and tar sands, and fractured oil shales, and b) identify an initial set of technology gaps that would advance activities in this area.

2. Pending the outcome of this summary assessment review and identified technology gaps, plan to include activities designed to address these technology gaps in the 2009 RPSEA solicitation and/or the 2009 Complementary program.

3. The DOE study take into account and document a) those considerations that make a pure upstream play (i.e., plays being developed by independents that do not have pipelines or refineries) economically hampered, such as the heavy oil differential, and b) the additional environmental burden of heavy oil, including the carbon penalty and water usage.

4. The DOE needs to be actively involved in Federal, state and regional decision-making processes that may result in regulations that impact development of oil and gas resources, to ensure that larger national energy needs are taken into account.

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

Unconventional Resources Technology Advisory Committee Meeting

Public Walk-In List - March 4, 2008

Last Name	First Name	Organization
Beach	Steve	RPSEA
Fray	Russell	RPSEA
Haver	Chris	RPSEA
Helms	Lynn	IOGCC
Knaus	Emily	Intek, Inc.
Ming	Mike	RPSEA
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

Attachment 6

Department of Energy
Washington, DC 20585

MEMORANDUM FOR FILE

TO: JAMES A. SLUTZ
ACTING PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR
FOSSIL ENERGY

FROM: GUIDO DEHORATIIS
ACTING DEPUTY ASSISTANT SECRETARY FOR
OIL AND NATURAL GAS

SUBJECT: **ACTION: Approve Janet Weiss as Alternate for Pat O'Bryan at Unconventional Resources Technology Advisory Committee Meetings on March 4 and March 13, 2008**

ISSUE: Due to the recent restructuring of the North American Gas Business Unit, BP America Production Co., Dr. Pat O'Bryan has changed assignments, and has formally requested that his replacement, Janet Weiss, be allowed to act in his capacity at the final two meetings of the Unconventional Resources Technology Advisory Committee (URTAC). If approved, Ms. Weiss would not replace Dr. O'Bryan as a member of the committee; she would become his 'alternate'.

As the Designated Federal Officer, you are being asked to approve this request. If approved, a signed copy without attachments will be entered into the March 4 and March 13 URTAC meeting minutes for the record. The signed original with all attachments will be stored with the other original records of the committee retained in the Office of Oil and Natural Gas as part of the permanent record.

BACKGROUND: The URTAC charter is silent on the question of 'alternates' serving in the place of a committee member appointed by the Secretary. General Counsel advised that it is common practice to have 'alternates' serve in place of appointed members.

Originally, when developing the charter, we believed it would not be in the interest of the Department to have 'alternates' participate in committee meetings because of the need for continuity and for members to work quickly to develop recommendations. We felt that having a different group of people at each meeting would slow the work and lessen the quality of the final product. However, we also foresaw the possibility of a situation in which the best decision would be to allow an 'alternate' to serve. Therefore, we chose to remain silent in the charter on the question of 'alternates' so as to examine the question on a case by case basis, and we have discouraged members from sending 'alternates' in their place.

We are now faced with a situation in which a corporate restructuring has motivated a member to seek approval for an 'alternate'. We have examined the case, and believe that it is in the best interest of the Department to support such a request. Attached is a

protocol that we have developed for processing the approval of an alternate. The protocol, titled "Procedure for Approval of Alternate", documents a simple, transparent process. The protocol recognizes that a Secretarial appointment to the URTAC follows a rigorous process, and that the request for approval of an 'alternate' is granted only for good cause.

ISSUE ANALYSIS: We have received a formal request from Dr. Pat O'Bryan requesting that Janet Weiss be named an 'alternate', and act for him at the March 4 and March 13 meetings of the URTAC due to a corporate restructuring. This corporate restructuring has resulted in Ms. Weiss being named to the position of Technical Director for Wells, North America Gas SPU, BP America. This is the position previously held by Dr. O'Bryan. In his letter, Dr. O'Bryan states that the Technical Director is accountable for delivering BP's unconventional gas technology program. Attached is Dr. O'Bryan's letter requesting that Ms. Weiss act for him at the meeting.

Ms. Weiss's bio indicates that she has the proper background to stand in for Dr. O'Bryan as a representative member of the committee presenting the viewpoints of affected interests in unconventional natural gas and other petroleum exploration and production. In the past, she has served as the Exploration and Production Director of Organizational Capability for Operations, the Performance Unit Leader for BP's Western Wyoming business, and the Performance Unit Leader of the Base Operations for the Gulf of Mexico Shelf. She has over 23 years industry experience in various roles including process engineer, reservoir engineer, and commercial analyst. Attached is a copy of her bio.

Also note that the March 13 meeting will be the last meeting of this committee before a new charter and membership roster are established. Therefore, BP will have an opportunity to nominate a new permanent member of the URTAC for the 2008-2010 term of the committee.

RECOMMENDATION: that you approve Dr. O'Bryan's request for Ms. Weiss to serve in his place at the March 4 and March 13, 2008 meetings of the Unconventional Resources Technology Advisory Committee.

APPROVE: _____ 2-28-08
Date

DISAPPROVE: _____
Date

ATTACHMENTS:
"Procedure for Approval of Alternate"
Letter requesting approval for alternate from Dr. Pat O'Bryan
Bio for Janet Weiss

Prepared by Elena Melchert, 202/586-5095

Unconventional Resources Technology Advisory Committee

PROCEDURE FOR APPROVAL OF ALTERNATE

The purpose of this statement is to establish a procedure whereby the Designated Federal Officer (DFO) will approve or disapprove the request of a person who has been appointed by the Secretary of Energy as a committee member to allow another person to represent them at a particular meeting of the Committee.

The Committee charter does not disallow the designation of an "Alternate" to act for a particular member on the Committee, and the action of DFO does not disturb the Secretary of Energy's appointment of a person as a member of the Committee. However, there are situations when it is in the best interest of the Department to support a member's request to grant the status of "Alternate" to another non-appointed person to represent him or her at a specific Committee meeting.

In the event that the DFO determines that it is in the best interest of the Department to support a member's request to grant the status of "Alternate" to a non-appointed person to represent him or her at a specific Committee meeting, the procedure shall be as follows:

- The Committee member requesting the action must present the request in written form. The request should include:
  - Date of the Committee meeting;
  - Justification for the action;
  - Brief summary of the qualifications of the person being named as the "Alternate"
  - Contact information for the "Alternate".
- The DFO will:
  - Review the request, justification, and qualifications statements
  - Determine if it is in the best interest of the Department to approve the request
  - Sign an approval/disapproval statement recording his/her decision
- The Committee Manager will:
  - Contact the member and inform them of the approval/disapproval
  - Contact the 'Alternate' and inform them of the approval/disapproval
  - Ensure travel arrangements, etc are made for the 'Alternate'
  - Enter the DFO's approval statement into the record of the meeting
  - Store the original approval document and all supporting documents with the permanent records of the committee.

Pat O'Bryan
Wells Director
North America Gas SPU

BP America Production Company, Inc.
501 Westlake Park Blvd
Houston, TX 77079

Phone 281 366 2951
Fax 281 366 7981

February 25, 2008

Elena Melchert
Committee Manager
Unconventional Resources Technology Advisory Committee

Dear Ms. Melchert,

BP America has recently undergone a restructuring of the North America Gas Business Unit. This re-organization has resulted in Janet Weiss being named to the Technical Director position that is accountable for delivering BP's unconventional gas technology program.

I would like to designate Janet Weiss to perform my URTAC duties in my place. Janet is qualified to perform in this capacity due to her vast experience in this field.

Janet will act for me at the March 4, meeting and the March 13 teleconference.

Sincerely,

Pat O'Bryan
Wells Director
NA Gas Operations

dbs

Janet Weiss

Janet currently serves as the Director for BP's Unconventional Gas Technology for Resource Progression efforts.

Prior to this appointment, Janet was the Exploration & Production Director of Organizational Capability for Operations and HSSE. Janet has also served as the Performance Unit Leader for BP's Western Wyoming businesses and as the Performance Unit Leader of the Base Operations for the GOM Shelf.

Earlier in her career, Janet held various roles including process engineer, reservoir engineer, commercial analyst, and a variety of leadership positions. She has over 23 years industry experience and holds a BS in Chemical Engineering from Oklahoma State University.

Janet and her husband, Troy, have a teenage daughter and son.