

Good morning, Ladies and Gentlemen. It is a great pleasure to provide this Global Oil and Gas Study status update to the National Petroleum Council members. On behalf of the study team, I want to begin by thanking the Secretary of Energy, the Executive Committee members, the Government Co-chairs, our colleagues at the National Petroleum Council and the Coordinating Subcommittee members for their continuing support and their wise counsel.

A lot has occurred since this project began last year. The energy industry remains front and center in the public mind and there is much debate about the long term direction of energy policy. Some of that debate is serious and informed, yet all too often, the discussion that occurs is sensational, uninformed or politically charged.

As a broad based independent industry body, the National Petroleum Council has a critically important role to play in adding value to any serious discussion about energy. Building on the considerable experience of its member companies, the N.P.C. is well qualified to provide a balanced and informed perspective on strategies and action affecting the energy future for both the United States and for every country on earth.

For those of us who have worked in this industry around the world, it is abundantly clear, in the 21st Century, that energy is essential to people in developed and developing countries alike. It is necessary for economical progress and vital to maintaining and raising living standards.

Public concerns about future energy supply and climate change have increased interest and awareness about energy supply options and security, prices and the potential effects of global energy consumption on the environment. However, despite this renewed interest and awareness, only a small segment of the public seems to fully understand some fundamental truths about our global industry.

Starting with scale. The scale of global energy consumption is enormous, a concept that is hard for many to comprehend. The time lines involved in developing major projects can span decades, a fact that is all too often overlooked. And the capital required to maintain and grow the energy infrastructure is massive by any standards.

Of course, the people who work in this energy industry understand these fundamentals. They have first hand experience in every aspect of the business and have displayed considerable expertise in driving innovation in their fields.

As the Coordinating Subcommittee Chair for this Global Oil and Gas Study, I believe we have a historic opportunity to foster serious and informed discussions, enhance widespread understanding about the scale and significance of our activities and propose sound strategies and actions to meet today's challenges and to benefit future generations.

The Global Oil and Gas Study will make a positive contribution to progress in the energy sector. And I am confident we can achieve meaningful progress by drawing on our collective knowledge, and experience to communicate the facts about energy and, thereby, help people make wise policy choices concerning its future.

In the next few minutes I will revisit the origins of the study, and the critical questions suggested by Secretary of Energy, Sam Bodman, describing the work that has been done, to define guiding principles, our organization structure, our proposed approach, and the next steps for this study.

Over the past 10 weeks, the study leadership team has spent considerable time and effort preparing the front end design, clarifying documentation procedures, designing integrated work processes and building an efficient web based communication and support system.

The quality and commitment of the team that has been engaged so far is impressive. And with the recent expansion of the team members to include a broad cross section of resources, we are greatly encouraged.



The study origins date back to June 22 of last year, when Secretary Sam Bodman delivered another insightful speech to the annual National Petroleum Council gathering. He outlined then, the challenges facing the oil and gas sectors, and devoted particular attention to volatile prices, growing global demand, and the uncertainty of reserve reporting. Themes echoed today in his very interesting comments.

He also commented on the technological challenges the industry facing in deeper waters, in the frontier regions, and in harnessing the power of so called unconventional hydrogen. All these areas he noted will entail increased capital, higher risks, and extended lead times. Challenges made even more daunting when investors also face the prospect of political, fiscal or regulatory uncertainty. At the conclusions of his remarks, Sam Bodman said and I quote, There are numerous areas where the National Petroleum Council's expertise might be brought to bear.

Secretary Bodman's foresight was clearly in evidence that day because here we are, one year later, ready to launch a major study on Global Oil and Gas on behalf of the National Petroleum Council.

Last October Secretary Bodman contacted Lee Raymond to ask that the National Petroleum Council conduct a study to consider certain suggested questions. And in November, the National Petroleum Council Agenda Committee recommended acceptance of the study and in December, the members voted to launch the Global Oil and Gas Study and to establish this Executive Committee.

Earlier this year, Executive Committee members, Lee Raymond, John Hamre, Andrew Gould, David Garman, Dave O'Reilly and Dan Yergin, proposed an organization structure to address the four key strategic dimensions of supply, demand, technology, and geopolitics and policy. In March, Lee Raymond asked me to serve as chairman of the Study's Coordinating Subcommittee. And in April, we formed a study co-leadership team to begin our work.

The first phase of this project is concentrated intensively on the project plan, which was approved yesterday, as Lee said, by the Global Committee. Today I would like to share the bases of that plan with you.

First, the impetus for this Global Oil and Gas Study derives from a letter sent last year from Sam Bodman to Lee Raymond. And I want to read the opening paragraph to you.

"Perspectives vary widely on the ability of supply to keep pace with growing world demand for oil and natural gas. The point in time at which global oil production will plateau and then begin to decline, peak oil, the implications these may have for the U.S. and world economy and what steps should be taken to achieve most positive outcomes."



The following three key questions were then suggested, repeated this morning by the Energy Secretary.

What does the future hold for global oil and natural gas supply? Can incremental oil and gas supplies be brought online, on time, at a reasonable price to meet future demand without jeopardizing economic growth?

And what oil and gas supply strategies and/or demand strategies does the Council recommend the United States pursue to ensure greater economic stability and prosperity?

With guidance from the Executive Committee, the Coordinating Subcommittee has been carefully considering the best ways to address these weighty issues and other questions we deem significant.

## **Study Principles**

## Principles

- Not another "grassroots" energy forecast.
- Will access and utilize public domain data sources.
- Input solicited from a broad range of interested parties.
- Emphasize long-term conditions, not near-term volatility.
- Recommendations supported by sound data and science.
- All study teams work within scope and on time.
- Full compliance with antitrust laws and regulations.

- N P C ------ Global Oil & Gas Study

The first thing the Coordinating Subcommittee did was to define a clear set of guiding principles, which I would like to share with you. They begin with a statement about what we are not going to do. Our first principle is that we are not planning to build another grass roots global energy outlook. There are many outlooks available, historic and current. And perspectives do indeed vary widely. Our preferred method going forward will be to gather reliable data, and relevant reports from all credible publicly available sources. And to analyze underlying assumptions, focusing on the accuracy and certainty or uncertainty of input. We intend to mine the data and understand the key drivers of various available energy supply and demand outlooks to the Year 2030. We will also identify and discuss realistic options for increasing supply or reducing demand.

From this global assessment, we will then provide an analysis of the United States' energy supply and demand balance with a focus on opportunities and vulnerabilities. Our third principle concerns inclusion. We plan to solicit input from a wide cross section of interested parties, including the U.S. and international industry, the U.S. and the international government, consumer and environmental groups, non governmental organizations, finance houses, consultancies, academia and others. We hope that all participants will bring their full support to this project, N.P.C. and non N.P.C. members alike. We will also encourage the appropriate task groups to draw upon other efforts underway to study energy issues. For example, the Business Roundtable Energy Task Force or the National Commission on Energy Policy.

Those of us associated with the energy industry, work in a large scale global industry and understand that the time taken to bring major projects on stream can extend over decades. Our fourth principle serves as a reminder in this area. Our approach will be to focus on stable, long term conditions through 2030, avoiding short term events and steering clear of knee jerk reactions to the issue of the day. When we conclude our project, we shall make recommendations to the U.S. Government. Our recommendations must be grounded in reality. Contributions are welcome from all those who bring practical knowledge and ideas based on sound data and science. This is our fifth guiding principle.

Let me also stress the importance of team work in this project. To achieve our goals, we must be very well aligned in all dimensions of the study. There are many cross cutting issues and interdependencies among the teams as you will hear in a moment. We designed our organization and internal communication strategy in recognition of the magnitude and complexity of this study. We must stay on task, focusing on the core questions relating to oil and gas by avoiding project creep. We will optimize our ability to deliver a final product of significant value on time by the second quarter of 2007.

Finally, I do want to underline the imperative to conduct this study in full compliance with anti trust laws and regulations. The U.S. Government's official request for National Petroleum Council advice on important energy policy matters provides a valid business reason for competitive companies to jointly conduct this study. However, the Government's request for assistance does not provide an anti trust exemption for study participants. Thus, at the beginning of every task group or work group meeting, team leads, all secretaries will provide anti trust guidance to ensure that participants observe appropriate behaviors.

At the Coordinating Subcommittee level, an anti trust lawyer is present at all our meetings. And our document handling procedures and our work processes have all been reviewed by expert outside counsel. On the next slide you will see a 4 visualization of the key dimensions of this project laid out separately in the detailed scoping paper in front of you.



At the center you will notice policy options. The primary objective and key point of convergence for all our study teams. As we work toward the development of these strategic options, the teams will be asked to consider the outlook for the U.S. and world economy, and its relationship with energy consumption. World primary energy demand and its drivers including potential for energy efficiency improvements.

Oil and gas supply models. The impact of technology on oil and gas supply and on end use consumption in fuels and power generation. Key geopolitical trends and their potential impact on energy supply and demand. The potential long term impact of alternative energies that are plentiful, affordable, reliable and transportable. Environmental considerations are also in scope, as we attempt to develop a balanced view of the energy and hydrocarbon future and clean fuels.

Each of the team leads yesterday expanded in detail on their approach and I will summarize those personally in a moment.



Earlier in the presentation, I commented on the organization structure in place, with the Executive Committee guiding a Coordinating Subcommittee and supporting task groups. The organization is shown on this slide. The co-leadership team is now in place and committed to this study and Government co-chairs are established on all committees and task groups.



During the planning phase, we have discussed at length the need to engage and include input from a broad range of resources. In addition to the National Petroleum Council membership, our leaders will reach out to include knowledgeable parties and opinion leaders through various means, such as subgroups, expert panels, workshops, focus groups, one to one dialogues, and other means.



I mentioned earlier that we have recently expanded our original Coordinating Subcommittee Leadership Team to include new members as depicted on this chart. And I am confident that the addition of the excellent individual representatives from these companies will provide great leadership and expertise and the diverse perspective we are seeking.

Joining the team will be Adam Sieminski, Chief Energy Economist from the Deutsche Bank; Kateri Callahan, President of the Alliance to Save Energy; David Slump, General Manager of Marketing at GE Energy; Doug Petno, Managing Director and Group Head of Energy at J.P. Morgan; Marvin Odum, Executive Vice President of Shell Exploration and Production in the Americas; Phil Sharp, President of Resources for the Future; Guy Caruso, Administrator of the Energy Information Administration; Bill Ramsey, Deputy Executive Director of the International Energy Association and David Seaton, Senior Vice President and Group Executive of the Fluor Corporation. And you also see Marathon on there, who will be providing resources in the near future.

As the project progresses, we reserve the option to extend the team further and as specific needs arise

As depicted on the next slide, the activities of the four task groups you will note are closely interrelated.



As a result, we have designed a matrix relationship between the teams. And key individuals will be designated to work across the boundaries to maintain alignment as the task groups develop parallel recommendations.



In addition, we are organizing the study team to take care of what we refer to as cross cutting issues as shown on this next slide. We have established 12 cross cutting subgroups, whose activities will be coordinated by the task group leads, and whose findings will be shared across the whole group. And this dimension of the project will be assessing the following areas:

In supply, teams will consider refining, infrastructure, gas to liquids and liquefied natural gas, bio-fuels and renewables. In the demand area, we will consider future consumer and social trends, as well as key economic variables. The technology group has a particularly important role to play. Beyond the core work on oil and gas, there will be complimentary studies into areas such as energy efficiency, unconventional hydrocarbons, nuclear, coal, CO2 sequestration, and technology development.



Now let me briefly review the individual task group plans starting with the demand team, which will be led by Jim Burkhardt of Cambridge Energy. The demand group has developed a clear plan for achieving their goal. After defining data needs, the first substantial step will be to understand the past. To understand how the future may evolve we must understand the past. The demand team will look back and identify what brought changes to energy demand over the 1970 to 2005 period, with the principle focus on oil and gas demand. The next set of actions will be gather, review and understand key sensitivities, built into publicly available energy demand projections out to 2030. By sensitivities we mean assumptions about key variables, such as fuel efficiency, and the size of the vehicle fleet, for example. The demand group is not going to develop a new world primary energy demand outlook, rather they plan to take advantage of the solid work already done by well respected institutions, such as the Energy Information Administration, and the International Energy Agency, and others. The demand team plans to work closely with the EIA and the IEA to understand the variables in their demand outlooks to 2030.

After identifying and gathering an understanding of the key sensitivities of existing outlooks, the team will seek external views about how energy demand and oil and gas demand, in particular, might turn out differently. Getting input from outside of the oil industry will be critical to the success of this step. The demand group plans to seek views from automobile and airline manufacturers, power companies, chemical companies, non governmental organizations, and other relevant bodies. As noted earlier, coordination with the other task groups will take place throughout the course of their study.

The final step will be to develop a balanced and credible set of demand oriented policy recommendations for consideration by the Executive Committee. Recommendations will reflect reasoned consideration of views expressed by the members of the demand task group and those from external sources.



In a similar vein, the supply task group led by Don Paul of Chevron, will focus on a broad range of publicly available models and projections concerned with oil and gas. This approach will include a comprehensive analysis of hydrocarbon supply dynamics, including geologic endowment, conversion from resources to reserves, from reserves to production, from production to manufacturing, including the important subject of potential supply depletion curves. Refining and manufacturing and transportation and logistics will be rolled into the supply group in order to better integrate findings from a total supply chain perspective.

The scope of the hydrocarbon resource model being developed will include natural gas, conventional oil, heavy oil, extra heavy bitumen, shale oil and coal. From this comprehensive analysis the team will develop findings for a range of supply projections and assess outcomes for the probability shape and timing of supply curves.

Similar to the demand team, the supply team will review historic supply projections from 1970 in order to learn relevant lessons from the past. For the future, the team will undertake an assessment out to 2030 of supply variables based on facts such as technological advances, geopolitical trends, environment considerations, and economics.

As a result of this comprehensive analysis and evaluation of supply options, the team will develop in conjunction with the other task groups, clear, actionable policy recommendations to influence the probability, timing and shape of future supply curves.

As with all our teams, we intend to obtain input from a broad range of resources, in this case, the Government assistance in facilitating linkages with oil ministries of key producing countries will be especially valuable.



Rod Nelson of Schlumberger, is heading up the technology task group. The nature of the technology task group is a little different from the other teams, in that they will be covering a wide range of issues. In addition, whereas the other tasks can be tackled somewhat sequentially, the technology team plans to break the tasks into themes and handle them more or less in parallel. The technology themes are topics like heavy oil, deep water, unconventional gas from the supply side and automobile fuel efficiency from the demand side, to name just a few. Each theme or topic will require different expertise in order to provide the best possible analysis and recommendations.

It is the team's intention, just as it is for the broader study, to engage with a wide range of knowledgeable people from a diverse set of companies and institutions, including oil and gas producers, service companies, technology developers, universities, and consumer groups.

I am sure you can also see that close cooperation between the technology task group and the supply and demand and policy teams will again be essential. We built this into our plans, and will ensure that any conclusions are incorporated into the other groups' work and ultimately the policy recommendations.

The technology team will be engaging with National Petroleum Council and non National Petroleum Council member companies and organizations on topics like coal, and nuclear power, to understand what technology impact is possible and likely in these areas over our study time frame. The team will not be doing original work in these areas, but it is important we cover them, to understand the potential impact on oil and gas demand.

Similarly, the technology team will be engaging with consumer groups and manufacturers to report the impact of technology on demand through energy efficiency improvements on new fuel options. Clearly, the U.S. Department of Energy has done much work on the subjects and we will fully utilize this as well as their contacts within other countries in industry and academia.



In addition to the technology themes, the team will also develop views and reports on other critical technology issues such as time horizons for implementation of new technology, research budgets and the link between them and innovation, development of the human resources necessary to develop and deploy new technology and finally, we will look into the issues of technology penetration and usage.

Upon completion of this broad based analysis, the technology team will again develop recommendations in conjunction with the geopolitical and policy group.



Frank Verrastro of CSIS is leading the fourth of our Task Groups, Geopolitics and Policy. Frank's approach initially will be to establish a series of regional geopolitical workshops under the umbrella of CSIS. The mission will to be evaluate various energy, foreign policy, investment, trade, environmental, economic, security, and other policies of producing and consuming nations with respect to managing energy resources and consumption practices. These workshops led by scholars, will include a broader array of resources with topical expertise. Their goal is to identify key factors likely to result in sub optimal realization of resource development and distribution, and recommend actions to mitigate unfavorable practices.

The approach will include a survey of literature for relevant studies and materials related to geopolitics, energy production, and consumption, bilateral relationships, diplomacy, and conflicts.

Additionally, the team will interface with the other task groups, reviewing relative materials gathered by the supply, demand and technology teams.

Outreach will be extensive, including non governmental organizations, environment, diplomatic and academic communities.

The thorough process being adopted by this task group will include a review of relevant, historical energy policy decisions and the consequences of these choices. Again, we believe that learning lessons from the past can help us identify policies for the future that will be effective in supporting U.S. energy security and future economic prosperity and stability.

We envision that the bulk of the geopolitical and policy teams recommendations will fall out of the work done by the other task groups. Consequently, we expect a very high work load towards the conclusion of this integrated study.



After several weeks of planning, we are now ready to begin the heavy lifting. The task group leaders are finalizing the selection of team resources, and setting up working sessions in the near future. Our anti trust guidelines have been completed and I am confident that our extended leadership team and legal advisors will ensure that appropriate behaviors are exhibited at all times.

We have developed a website to facilitate internal communications across the team organization and will continue to develop and adapt this site as we learn more.

We also have a plan to direct questions from third parties to N.P.C. headquarters for handling.

The teams will now accelerate the gathering and analysis of public domain data. With the help of core team members from the EIA and IEA, which will carry out an extended search of relevant data and information from multiple sources around the world.

From July 1 onward, we plan to conduct weekly conference calls among the Coordinating Subcommittee team leads, with monthly face to face meetings of the full Coordinating Subcommittee membership. Milestone reviews will be scheduled with the Global Committee and its leadership, with the next review scheduled in the Fall.

A preliminary report is scheduled for circulation among Global Committee members in the first quarter of 2007. And we expect the approval of the final report by the second quarter of next year.

Ongoing communications will be essential. We expect no conclusions to be discussed or published in 2006, but we do plan to share our goals and work process widely as we solicit input from all interested parties.

As I said, we plan to direct questions about the study and its progress to National Petroleum Council Headquarters for handling. And we do appreciate the completion of the final report as not the end of this journey. Follow up communications of our findings will be required by all those involved in this study.

Let me conclude by saying that we are under no illusions about the scope, complexity, and timing of this project. We look forward very much to your support and I thank you for your attention during these remarks.



More information on the National Petroleum Council and its Global Oil and Gas study can be viewed and downloaded on the Council's website (www.npc.org)