CERTIFICATE OF AUTHENTICITY

I hereby certify that this transcript constitutes an accurate record of the full Council meeting of the National Coal Council held on November 14, 2008 at the Westin Grand Hotel, Washington, D.C.

Michael G. Mueller, Chair
National Coal Council

12/9/08
(Date)

Page 7 — " is hereby called to order" is missing

Page 148 — spelled Mike's name incorrectly

Mike Mueller comments on the transcript

NATIONAL COAL COUNCIL

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FULL COUNCIL MEETING

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FRIDAY
NOVEMBER 14, 2008

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The Full Council meeting convened at 9:00 a.m. in the Washington Ballroom of the Westin Grand Hotel, 2350 M Street, NW, Washington, DC, Chair Michael G. Mueller presiding.

ATTENDEES:

MIKE MUELLER, Ameren Energy Fuels & Services Company, Chair
RICH EIMER, Dynegy Inc., Vice-Chair
ROBERT BECK, National Coal Council, Executive Vice-President
SY ALI, Clean Energy Consulting
BARB ALTIZER, Eastern Coal Council
TOM ALTMEYER, Arch Coal, Inc
DAVID ANDRE
CAROL BAILEY, RDS, LLC
DICK BAJURA, National Research Center
ERIC BALLES, Babcock Power, Inc.
NEIL BANKSTON
TED BARNA, BarnaSolutions, LLC
MARILYN BECK
JANOS BEER, MIT
RICHARD BERL, Esquire
BOB BESSETTE, CIBO
ROGER BEZDEK, MISI
JACKIE BIRD, WorleyParsons
SIMON BOYCE, Navajo Nation
BILL BROWNELL, Hunton & Williams

ATTENDEES: (CONT.)

ROB BRUBACKER, Porter, Wright, Morris & Arthur
FRANK BURKE, Consultant
MIKE CAREY, Ohio Coal Association
BILL CAYLOR, Kentucky Coal Association
JAMES CHILDRESS, Gasification Research Council (Guest Speaker)
PAUL CICIO, Industrial Energy Consumers of America
FRANK CLEMENTE, Peabody (Guest Speaker)
THE HONORABLE JAMES CONNAUGHTON, Council on Environmental Quality
CHRISTINE CORDNER, Platts
MICHAEL CROTTY, MKT & Associates, LLC
TODD CUNNINGHAM, NRECA
STU DALTON, EPRI
MIKE DELALLO, WorleyParsons
ANITA DIXON
BOB DIXON, CEQ
MIKE DURHAM, ADA Environmental Solutions
JOHN DWYER, Lignite Energy Council
BILL FAY, Fay & Associates
PAUL FELDMAN, Midwest ISO
RIC FENTON, Foundation Coal Corporation
DAVID FINKENBINDER, National Mining Association
JOHN FISCHER, Solid Systems Engineering, LLC
SHANNON FRASER, Department of Commerce
BOB GABBARD, PPL EnergyPlus
JOSIE GASKY, The Annapolis Center
JANET GELLICI, American Coal Council
JOHN GRASSER, Department of Energy
LARRY GRIMES, NCC General Counsel
MANOJ GUHA, Consultant
MARTY HALL, Office of James Connaughton
RICHARD HALL, Richard Hall, PC
CLARK HARRISON, CQ, Inc.
BILL HOBACK, Illinois DCEO Office of Coal Development
JERRY HOLLINDEN, Consultant
JOE HOPF, PSEG Energy Resources, LLC

ATTENDEES (CONT.)

HOLLY HOPKINS, Department of Interior
DAN JACK, Reschini Agency, Inc.
CHARLES JONES, FirstEnergy Solution
ROBERT KANE, Department of Energy
TONY KAVANAUGH, American Electric Power
NORMAN KETTENBAUER, The Babcock & Wilcox Company
JOHN KINSMAN, Edison Electric Institute
KLAUS LAMBECK, PUCO
TOM LINEBARGER, Cummins Power Generation
JOHN LONG, Constellation Energy
SARAH MAGRUDER-LYLE, American Petroleum Institute
MIKE MCCALL, Luminant
MARK MENEZES, Hunton & Williams
JEFF MILLER, Luxottica Retail
KEN NEMETH, Southern States Energy Board
JOHN NORRIS, Fuel Tech, Inc.
JOHN NOVAK, EPRI
MARY EILEEN O'KEEFE, Evergreen Energy
BRENT ORRELL, Department of Labor
JANINE MIDGEN-OSTRANDER, Office of Ohio Consumers' Counsel
ROLLAND OTTE, Entergy Trading Company
DAN PACKER, Entergy New Orleans
CHRIS PARA, Smith Barney
ALMA PATY, American Coal Foundation
BOB PEARSON, CH2M Hill
MOYA PHELLEPS, National Mining Association
CHRIS POIRIER, CoalTek, Inc.
BOB PURGERT, Energy Industries of Ohio
HAL QUINN, National Mining Association (Guest Speaker)
CONGRESSMAN NICK RAHALL
FRED REUTER, Conservationist & Science Educator
MARY NOEL REUTER
CAROLYN SALAPA
JIM SLUTZ, US Department of Energy
CHESTER SMITH, Prairie State Generating Company, LLC
DAN SMITH, Norfolk Southern Corporation

ATTENDEES (CONT.)

BILL SPENGEL, URS Corporation
JOE STANKO, Hunton & Williams
SKIP STEPHENS, Joy Global
DAVID STUART, Smith Barney
DAVID SURBER, Make Peace With Nature TV Show
MALCOLM THOMAS, US Coal, Inc.
WALLACE TILLMAN, NRECA
ARVIN TRUJILLO, Navajo Nation
DAVID TURNBULL, North Point Resources, LLC
BARBARA TYRON, EPRI
RAJA UPADHYAY, Pincock, Allen & Holt
BUD WALKER, Midwest Generation
KATHY WALKER, Elm Street Resources, Inc.
JEFF WALLACE, Southern Company
KATHY WALTON, The Basic Industries Group, LLC
BILL WEISSMAN, Venable, LLP
BOB WHARTON, South Dakota School of Mines & Technology
ADRIENNE WINES, Richard Hall, PC
JIM WOOD, Babcock Power, Inc.
JON WOOD, Foundation Coal
GREG WORKMAN, Dominion Resources
DAVID ZIEGNER, Indiana Utility Regulatory Commission

T-A-B-L-E O-F C-O-N-T-E-N-T-S

P-R-O-C-E-E-D-I-N-G-S

(9:00 a.

CHAIR MUELLER: Good mornin ladies and gentlemen. My name is Mike Mueller, and I'm the ~~children~~ CHAIRMAN of the National Coal Council.

The regular meeting of the National Coal Council.

At our meeting this morning we're fortunate to have a number of very special guests.

We are pleased to welcome this morning the Acting Assistant Secretary for Fossil Energy the Honorable James A. Slutz.

Also, we have the following speakers on today's agenda:

Frank Clemente of Penn State University;

Jim Childress, Gasification Research Council;

Hal Quinn, National Mining Association.

Along with speaking to the Council today I'm also pleased to recognize Jim Slutz as the Federal Designated Representative.

In addition to these speakers, we must also conduct the regular business of the Council. So we have a very full agenda today.

This meeting is being held in accordance with the Federal Advisory Committee Act and the regulations that govern that Act.

Our meeting is open to the public. I would like to welcome guests from the public who have joined us today. An opportunity will be provided for guests to make comments at the end of the meeting.

Full and complete minutes of this meeting are being made as well as a verbatim transcript. Therefore, it is important that you use the microphone when you wish to speak and that you begin by stating your name and affiliation.

Council members have been provided a copy of the agenda for today's meeting. I

would appreciate having a motion for the adoption of this agenda?

JERRY HOLLINDEN ~~PARTICIPANT:~~ Moved.

CHAIR MUELLER: Do we have a second?

DICK BAJURA ~~PARTICIPANT~~: Second.

CHAIR MUELLER: All those in favor?

ALL: Aye.

CHAIR MUELLER: Opposed?

Thank you.

The Secretary has appointed new members to the Council. I would like to ask that if any of the new members are here, that they please stand so that we can recognize them.

Ted Barna, Barna Solutions.

Bill Caylor, Kentucky Coal Association.

Michael Crotty, MKT & Associates.

Robert Gabbard, PPL Energy Plus.

Christopher Poirier, CoalTek, Inc.

Hopefully, I said that right.

MR. POIRIER: Yes.

CHAIR MUELLER: Good.

William Spengel, URS Corporation.

Robert Wharton, South Dakota School of Mines and Technology.

David Signer, Indiana Utility Regulatory Commission.

Congratulations on your appointments. We're very happy to have you on board.

Next I'd like to introduce Jim Slutz. Jim is the Acting Assistant Secretary for Fossil Energy.

Mr. Slutz is the executive responsible for leading the Office of Fossil Energy, which includes the coal, oil and natural gas business lines in the Department of Energy, This includes extensive research in areas such as carbon sequestration, redistribution and high efficiency power generation in ultra deep water and

unconventional gas production.

Jim also oversees the nation's strategic petroleum reserve and serves as the primary policy advisor to the Secretary on fossil energy issues.

Please join me in welcoming the Honorable Jim Slutz.

ACTING ASSIST. SECRETARY SLUTZ: Thank you, Mike. I'm grateful for the opportunity to be here and it's just I'm very pleased to join you this morning.

I think everybody, not just in this room but around the world is aware that we had an election a couple of weeks ago. So this will be the last time that I have the opportunity, at least in my present capacity, to join you. But let me just say that one of the things about this job that I will miss with this group and others is the extraordinary opportunity that I have and have had to talk with a broad cross section of energy industry leaders such as you. So that

is an extraordinary part of these jobs.

And with the changes there will be different views. And many policy changes effecting many areas of American life as always happens when a new Administration takes over. But the reality doesn't change, and facts don't change. And in the coal and power generation sector we believe we have faced facts squarely and fashioned a clean coal policy and program that is aligned with reality and provides a foundation for the future.

I'm confident that the new Administration will find a clean coal program that is well thought out, forward looking and on the brink of big things, particularly in the area of carbon capture and storage technology. And this will allow the coal to continue to add to the foundation fuel for power generation in the United States.

As you all know, we very much rely on coal to meet our vast energy needs. I

don't think anything that our country uses 1.1 billion tons of in a given year is going to go away anytime soon.

Clearly the better and, frankly, inescapable answer is to find ways to use this abundant resource more cleanly and efficiently. Of course, you all know this, and in fact is a topic of study you completed earlier this year titled "The Urgency of Sustainable Coal."

Over the past five years the Council has submitted a series of insightful reports to the Secretary of Energy outlining out the United States can use coal to solve some of our most pressing energy needs. The Secretary and the Department appreciate the thoughtful insights that you have provided and on behalf of the Secretary, I want to thank you for your recommendations in this latest report.

The premise, of course, is that while coal plays a critical role in meeting

both our domestic and global energy needs, the burning this tremendous resource for electricity generation results in the release of emissions, including carbon dioxide which contributes to climate change. Of course, the answer to this dilemma is technology, on having the right technologies at the right time which means aligning the technology development and policy implementation timelines. It's not an easy task.

And this morning what I'd like to do is, first, connect the international events with recent developments in the United States that may be of interest to you. Second, update you on specific developments in advanced coal research, development and demonstration in the United States especially in the critical area of Co_2 capture and storage. And finally, offer ideas on three parallel tracks that must be developed simultaneously and globally if we are to succeed. And by the way, this is a change we

are capable of meeting.

Let's begin with a brief overview of U.S. events that relate to international developments. In April 2007 the President committed America to a new goal: To stop the growth of Co_2 an Co_2 equivalent greenhouse gasses by 2025 and, thereafter to reduce it. He explained the decision this way in a speech in the Rose Garden. "We have slowed the growth in emissions. Now is the time for the U.S. to look beyond 2012 and take the next step." His reference was to a commitment made in 2002 to reduce carbon intensity in the United States economy by 18 percent by 2012. All statistics show we are on track to achieve at least this. In fact, United Nations' data show that the U.S. has reduced net greenhouse emissions by three percent since 2000, the second best among 17 major economies. And this was done using voluntary programs.

Only five nations and one grouping of nations were able to reduce emissions at

all. France, the U.S., the United Kingdom, the EU 15 and Japan.

The President's National Council on Environmental Quality has further determined that recent steps taken by the federal and state governments will avoid six to ten gigatons of Co_2 and Co_2 equivalent gasses through 2030. Such steps include: Higher milage standards for motor vehicles; a requirement to development and use renewable fuels, and; a renewal energy portfolio standards imposed by state governments and power generation.

We believe this to be the world's largest documentable increment of mitigation to date.

The next step referred to by the President to stop the growth in emissions foresees a peaking of power plant emissions in 10 to 15 years that we've brought about by accelerated development and deployment of advanced technologies. Our responsibility in

the U.S. Department of Energy's Office of Fossil Energy is to develop this technology.

Everyone here knows that there are only two ways to significantly moderate Co_2 emissions in coal-based power generation. The first is to increase efficiency of generation. Reports prepared by the International Energy Agency for the G8 nations include findings on higher efficiencies such as these:

Maximizing efficiency is a major pathway to reducing Co_2;

Rapid and wide scale reducations are available through efficiency increases and plant upgrades;

Integrated gasification combined generation, IGCC, and advanced steam cycle such as ultra-supercritical generation will play an important role in increasing efficiency worldwide.

At least 1.7 gigatons of Co_2 emissions a year could be avoided through steps to raise worldwide efficiency. A larger

reduction than that sought by the Kyoto protocol.

And the higher efficiencies of IGCCC and ultra-supercritical generation will be necessary to enable widespread carbon dioxide capture and storage.

IEA recommended steps for increased efficiency include:

Retirement and replacement of the least efficient plants;

Upgrade of mid-ranked plants;

Precombustion coal preparation;

Improving plant performance, and;

Requiring that all new plants be state-of-the-art.

In addition, as you are aware, a previous National Coal Council study estimated that efficiency upgrades and retrofits to existing coal-based plants could avoid about 200 million tons of Co_2. Efficiency increases are prominent in the Hokkaido Declarations of the G8 nation, a major economy meeting which

set forth the areas in which parties reached agreement. They were singled out as a low cost way to reduce greenhouse gas emissions and elevate energy security.

The other way to mitigate Co_2 omissions in coal-based power is carbon dioxide capture and storage, CCS. CCS has come to be seen as indispensable in dealing with the concern about energy and climate.

Not long ago the Director of the International Energy Agency said it will be the most important technology in reducing Co_2 emissions.

Research, development and demonstration of Co_2 capture and storage is the responsible of the Fossil Energy Office, as you know. Our work is done on a cost shared basis with industry, academia and others in the private sector. We specify objectives in the private sector, including many companies represented here today respond with technology proposals. We have more than 70 active and

ongoing projects in the carbon sequestration program which include capture, monitoring, mitigation and verification.

We've invested almost 500 million since 1997. We began with one million dollars and our current budget is about $120 million a year. Investment grew by a factor of almost 50 during the Bush Administration, and has grown by a total of $429 million to date.

The increases reflect the importance the Bush Administration assigns to CCS. So let's first take a look at the capture part of CCS.

Our National Energy Technology Laboratory has work in progress on a range of capture technologies. On precombustion, post-combustion and oxygen combustion, and on technologies for new construction as well as retrofit. We are solvents, adsorbents, absorption, adsorption, membrane separation, chemical looping and other applications.

We're looking at improving

performance with existing materials and creating more effective new materials.

In July, we awarded $36 million to 15 projects that will further the development of cost effective retrofit technologies.

And perhaps 145,000 megawatts of U.S. coal-based generating capacity may be suitable for retrofit. That's approximately 45 percent of the capacity.

On the storage side, large scale and demonstrations of storage will begin next year under the regional carbon sequestration partnerships, which are also part of the carbon sequestration program. The partnerships encompass 42 states of the United States and four Canadian provinces. They span most of North American land mass. There are seven partnerships because partnership boundaries are delineated by pertinent and common geological features. Their membership is compromised of more than 350 unique entities: The power energy producers of a

given region as well as related enterprises, universities and academics, state geological surveys and public interest groups.

To date the partnerships have identified 3,500 gegatons of potential geological storage in the U.S. and Canada and 3.8 gegatons of Co_2 a year subject to capture at power plants and other stationary sources.

The ratio of emissions to storage capacity is more than 900 years.

Each partnership has conducted moldable small scale field validation tests to assess promising reservoirs. Next year they will begin eight large scale injections into their most promising reservoirs in the deployment phase, phase three.

One partnership will conduct two tests: One in North Dakota and one in the Canadian Province of British Columbia. There will be seven tests involving deep saline at reservoirs and one of storage linked with enhanced oil recovery. Two injections are

currently scheduled to begin in 2009, four in 2010 and two in 2011. They will range from 250,000 tons per year to 1 million tons of Co_2 per year.

In total, 16 million metric tons will be injected and monitored during the tests. Co_2 for injection will come from natural deposits, ethanol production, natural gas processing and in two cases eventually from coal-based power generation.

Two partnerships have announced plans to use capture technologies in the demonstrations. One will use ammonia-base capture and the other oxygen combustion.

Each large scale test of the deployment phase is intended to lay the foundation for future commercial demonstrations by validating a region's principle reservoir. It will also validate that sequestration can be commercially applied in many different geologies.

Of equal importance, the

partnerships also are developing formal procedures and scientific principles necessary to establish a regulatory and statutory basis for the successful practice of safe and permanent long-term storage. Activities will include qualifying projects, permitting, injection, post-injection monitoring and successful closure.

I should add that this is an area where DOE is working very closely with the U.S. Environmental Protection Agency. They develop the regulations, but we're developing some of that scientific basis to work so that their regulation can be most effective.

We do peer review of our scientific programs. That's a good thing. One of the challenges is, as I mentioned, were 300 different entities involved in these and it turns out everybody who is anybody who is the top of their field in sequestration in the United States is involved in one of these program. And the whole idea with peer review

is you get independent people involved. So we had to seek out an international panel to come in to do a peer review. And that, actually, ended up being a tremendous benefit to this get very objective outside expertise that wasn't at all familiar with these. And we are also very, very pleased that outside in that peer review process that this independent panel of experts that were assembled by the International Energy Agency we reached out to, and many of which I will say are Nobel laureates, and this was earlier this year,they found that the regional carbon sequestration partnerships constitute the world's most ambitious capture and storage program. The experts found that it will significantly advance the cause of CCS in the U.S., in Canada and internationally.

Which means this past summer the G8 nations called for advancing CCS internationally. They called for 20 major demonstrations by 2020. Under our current

research program the U.S. will support at least ten of these. Seven come from the regional partnerships, the seven that are in the United States. Others will come from the third round of the President's Clean Coal Power Initiative, CCPI, and from our restructured FutureGen project. Both CCPI and the FutureGen project were reoriented this year toward commercial square capture and storage to pull the technology forward.

Found three of CCPI will provide 340 million for demonstration of capture technologies capable of 90 percent capture efficiency and of storing or providing for beneficial reuse at least 300,000 tons of Co_2 a year.

The restructured FutureGen program seeks to foster commercial scale deployment of CCS technology. FutureGen demonstrations will be expected to capture and store up to 1 million metric tons of Co_2 a year in deep saline reservoirs.

Capture efficiencies will 90 percent.with this program,

Following extensive input from industry, the Department issued a funding opportunity announcement in June and received proposals by the early October deadline. We are now in a rigorous review process of those applications and tend to make the final selection of projects by year end.

This completes my review of the U.S. activity in research development and demonstration.

It's also important to look at the market. In the U.S. Market one project that is -- well, there are many projects of interests but let me just highlight one. Duke Energy began construction this year on its landmark scale-up of IGCC to 530 megawatts. This project will replace 160 megawatts of very old coal-fired power capacity. And I know, I had occasion just this morning to have a little chat on the state of Indiana with

Commissioner Ziegner. He's here somewhere. He's very excited about that project in Indiana. But that project will produce 45 percent less Co_2 per kilowatt hour and deliver ten times more power. And a study is underway on possibly linking it with CCS. So exciting in the commercial development.

Other IGCC plants and advanced coal systems are under construction or development around the world. Capture technologies are being tested at pilot scale and ready for scale-up in many nations. Storage and storage technologies are under development and many plans for near zero emissions plants are moving forward.

We've opened the door on a new era of energy security and climate security. To move through that door and enjoy the benefits of this era, we quickly have to move these technologies through IEA, report to the G8 nations called "The Valley of Death," and then into commercial use.

In the Valley of Death technologies languish and go unused go to high investment cost due to belief that there are significant risks and due to the lack of either technology push or market pull to move them forward. The through the valley is to proceed simultaneously on parallel paths symbolized by a triangle with legs of equal length and importance: Technology development, policy and markets. Right technologies influence policy and markets. Good policy influences market and technologies, technology development and uptake.

Our jobs are to get the technology right. The world has embarked on a drive to complete its electrification. We're moving in common directions. We are accelerating deployment of advanced coal generating technologies. We're accelerating development and deployment of CCS. The next few years will yield enormous amounts of experience in

design, construction and operations. Lessons learned will abound.

Now is the time to think about how to share that kind of information widely and frequently. We need to explore opportunities to expand information sharing and collaboration. We need to maximize our participation, especially from industry in this collaboration if we are to see the potential of carbon capture and storage technology realized.

We need to increase industry participation in the Carbon Sequestration Leadership Forum, the International Energy Agency, particularly their Clean Coal Center and greenhouse program and other international bodies.

And we need to know from industry how we in government can best participate with the advance of carbon capture and storage.

Advancing in carbon capture and storage technology and the collaboration to

that technology into the marketplace is a foundational step to mitigating climate change and ensuring energy security not just in the United States, but for the world.

And this work could not be successful without the direct participation of industry and other interested parties through venues such as the National Coal Council. The time that you take to support this advisory committee, a committee with the purpose of providing advice and recommendation to the Secretary and the Department is greatly appreciated. It is a service to the nation.

Thank you for your service. And thank you for your attention.

EXECUTIVE VICE PRESIDENT BECK: Good morning, ladies and gentlemen. Bob Beck with the National Coal Council staff.

Jim has agreed to take a few questions from the members of the Council. So if you have any, please raise your hand. And I will get the microphone to you.

For recording purposes, please identify yourself and your affiliation.

Questions?

Rich, I'm sorry. I can't see behind me.

VICE=CHAIR EIMER: Hi. Rich Eimer from Dynegy.

I'm just curious, Jim, what you see on the horizon for some sort of federal policy or action around resolving the liability issues associated with sequestration?

ACTING ASSIST. SECRETARY SLUTZ: First question is a tough question.

I'11 tell you, the liability issue on sequestration we all know is one of the key issues. And, I'11 tell you, I wish I had an easier clear answer on how that evolved. I don't. But that was one of those issues I think that when I talk about collaboration and it kind of bridges over not just technology but those kind of policy issues. Because I

don't think we in government always understand how those liability issues -- I know we don't understand how they effect companies and how, especially the Sarbanes-Oxley, some of those kinds of changes can have dramatic impacts on things like liability, how you do your financial reporting and all those issues. And I know we really don't have a grasp on that. So I think it's one of those areas that is going to be essential to figure out and really I think is going to have to take a lot more effort than has been put into it so far to move that forward.

Now I think on the flip side, moving these demo projects forward they kind of drive some of those issues. Fortunately, in some areas states have kind of stepped up to provide an overlay to get those projects moving forward. And then by that we'll get some examples, real practice to identify the real issues and kind of move that.

EXECUTIVE VICE PRESIDENT BECK:

Another question? Dick.

MR. BAJURA: Dick Bajura, West Virginia University.

Hi, Jim.

Had some email traffic yesterday with one of our technical societies in our work with the Hill, continual questions about carbon sequestration, will it work. In the work that the carbon partnerships have done I know they've been working with the general public. What kind of a feel do you have for how the public might embrace the proposals that we've presented here on how to declare this technology?

ACTING ASSIST. SECRETARY SLUTZ: You know, I don't think there's really a complete generic answer. Because I think if you look, and many of you know I've a lot of-- well, first of all, some of you may not know. Let me kind of give you just a little bit of mine.

I started my career promoting

underground injection wells for the oil and gas industry. So I got involved in a different kind of injection. And I would say there's not one answer to that that's universal across the country.

One: I think public outreach is going to be important to explain that. I think from the standpoint we do have as far as will it work, we know from geologic practices in the oil and gas industry because we've been injecting Co_2 for decades as part of enhanced oil recovery and we also have a lot of history with injecting other, like salt water that's a byproduct of production. We have a lot of research on tracking those injected fluids.

So I really think we know how to do it. The key is getting more information because of the time periods that we're looking at with Co_2, we want to increase our confidence in the modeling and things like that. So these research projects will develop the empirical data to advance those models. I

think that will be key. But I think in different areas, different communities, you're going to have different levels of concern. And I think the key is just like any kind of development project, it's going to be very important to plan an engagement, an education with the community on how this is going to work, how you're protecting the community. And then also why is this valuable?

Clearly, there is a great sentiment I think throughout the world that climate change is an important thing to address. And at the same time so is providing energy is absolutely critical for sustaining an economy or development an economy.

So those kind of issues, I think all that goes into the broader educating people and then working through those regional concerns. I think it's going to be a key issue.

EXECUTIVE VICE PRESIDENT BECK: One more. Mike.

MR. CROTTY: Mike Crotty from MKT and Associates.

Jim, what mechanisms are how are you bringing the Chinese into the collaboration of all of this research and development?

ACTING ASSIST. SECRETARY SLUTZ: There are a number of international mechanisms out there that engage the international community. And in particular in Chinese, we engaged through some multilateral programs like the Asia-Pacific Partnership. We actually have a couple of folks in the room that are very active in that. There is Stu Dalton and then Mr. John Hartwell from Australia is in the back and he chairs one of those task forces. But through mechanisms like that that are geared toward advancing that technology.

In addition, we work on a bilateral basis with the Chinese. Coming up in a few weeks is the Strategic Economic Dialogue which is led by Treasury, several

other agencies are involved. But energy issues and advancing climate technology are key issues in those types of dialogue to advance the technology, the information. And not just technology, but also things like I mentioned the Carbon Sequestration Leadership Forum in my comments. Advancing the policies around things like sequestration and sharing information.

There are other countries. I mentioned Mr. Hartwell, like Australia that are moving forward with regulatory structures for CCS. So how can we share those among different governments?

But there is specific cooperation with the Chinese but it's broader than that and it's important because climate change requires a global solution.

EXECUTIVE VICE PRESIDENT BECK: I didn't know that the *Federal Register* notice of this meeting got all the way to Australia, but I'm glad that Mr. Hartwell came along.

Jim, just from the Council standpoint, thank you for the many years that you all have served over there. We've enjoyed it, and we look forward to continuing the relationship in some manner as we go forward.

I know that there's a change of Administration coming, but we do greatly appreciate all the support that you all have given to us.

And we thank you for coming this morning. So thank you very much.

ACTING ASSIST. SECRETARY SLUTZ: My pleasure.

EXECUTIVE VICE PRESIDENT BECK: For the media folks, I think Jim will probably step outside and take a couple of questions.

CHAIR MUELLER: Okay. I'd like to move on to Council business and a presentation, discussion and action of the new draft papers that the Council has been working on. Jerry Hollinden and Jackie Bird and a number of others have done a lot of very good

work on these papers. And with that, I'll turn the podium over to Mr. Jerry Holliden our study team leader.

MR. HOLLINDEN: I have nothing to report.

Yes, this is, as was mentioned, my name is Jerry Hollinden. I had the opportunity to chair a reports -- maybe a lot of you don't know what we did, so maybe I'll give you a little background.

At the last meeting a number of us discussed it would be pretty nice if we could put together some packages of types of reports that we've done in the past for the new Administration. And I was asked to chair that. And we worked on these reports all summer, took us about four months. We started in June. We met, actually, by telephone. All of our meetings were with conference calls. And we had over 30 people participate. So it was pretty neat to do that during the summer when there was a lot of vacations going on and

things like that. But we think that these reports are excellent.

If you'd go to the next one, please.

The objective of these issue papers were:

(1) To educate the new Administration and Congress. We thought this would be extremely important on coal. And, you know, what our thoughts were on coal;

(2) The intent was to use existing National Coal Council publications. So there was no new information in these reports. That got us around some issues of having the Secretary ask us to do this because there was no new information in these reports;

(3) The reports were to be sharp and concise. They're four pages each, and;

(4) They were to be written as much as possible for the layperson. This got a little difficult. I mean when you write on advanced coal combustion, you know try to get

that into layman terms it was a little difficult. But in most cases I think that we wrote it for Congress and the staffers to understand.

When we convened we didn't know how many papers we were going to have. It turned out we ended up with eight. In the last days here we've actually talked about maybe adding a few more. So just because we've done eight doesn't mean that's all that we'll end up doing.

What you see up here are the eight issue papers. The first one was done by Frank Clemente on The Global Realities of Energy. This is a broad perspective, not just coal but where are we going in the world on energy and what are the concerns, issues.

The second paper was done by EPRI, the EPRI staff working with John Novak and Stu Dalton on Carbon Dioxide Capture and Storage and Its Issues.

The third and fourth reports were

prepared by one of our speakers coming up, Frank Clemente. One on Liquids From Coal and the other one on Substitute Natural Gas From Goal. Both of those focusing on the theme of energy independence.

The fifth report was done by Janos M. Beer on New Coal-Fired Plants. The focus would be on high efficiency new coal-fired plans. And in conjunction with that Vince Albanese did a similar paper on existing coal-fired plants: How Can We Improve the Efficiency of Existing Coal-Fired Power Plants?"

The seventh study then focuses basically on what we really wanted to get across, and that was coal. And Frank Burke talked about how coal, how it fits into our nation's future energy security, et cetera.

And then the last paper, kind of unique paper on Underground Coal Gasification by Janine Ostrander. There has been a lot of interest in underground coal gasification, a

lot of questions have been asked over the years. And we thought this made some sense to have this paper in here. It fits a little differently than the other ones, but there's a lot of advantages to making sure that the new Administration understands the advantages to such a technology.

The audiences for these reports, besides the normal media, civic groups and all that we normally send these reports, really is to focus on the new Administration. You know, the Executive Branch, the new Secretary of Energy, the Assistant Secretaries and Congress, and particularly their staffers. And, hopefully, that four pages is something that they can digest. Not read some of our real thick reports, but summary reports.

So it became key then that the themes that we develop in these reports they kind of go through all the reports, In other words, we wanted them to kind of if you read one, you read another and it looked like they

fit together in the types of themes that we're trying to convey. And I think when you read these you'll see that.

Number one, coal is abundantly domestic just like oil is in Saudi Arabia and gas is in Russia, you know we got the same thing with coal in the United States.

And it's affordable. You don't see these gigantic increases and decreases that we see, mainly increases but we've decreases in liquids lately. But coal is very affordable.

It will help us achieve energy security.

It's continually increasingly clean.

And probably the most important is that carbon capture and storage will make it happen.

And those are the themes that run through all these reports.

What we're asking the full Council

today is to take a look at these eight reports that are in your packet in front of you and we'd like for you to review them and get comments back.

There's been significant review already. As I said, there's been 30 or more people involved in these reports, but we still are asking for your advice. So we'd like for you to look at these papers, these eight, and get me comments back. Instead of sending them to the author or to Bob, if you would send them to me via email, then I can coordinate to make sure that the right people get the comments. If we're going to make a change in one, it's got to be reflected in the other ones.

And remember: The important thing is is that we're summarizing current reports that we've done. All the data may not be up to date as much as you would like. If we didn't do a report on something, but say two years ago, all we can do is report on that data. We

can't report on something that maybe has happened a year ago if that report came out two years ago.

So we'd like for you to look at that, make sure that we are summarizing that data accurately.

And then finally, if you have any ideas on new reports. You know, maybe we didn't capture; we've got eight in here, maybe you would like to see us do another one or two. What we'd like to do next year, as Bob and I have talked about, is maybe prepare three, four or five more for the new Administration on areas that we think are extremely important.

You know, one could be the issue when GAO asked us to look at if we converted all of our coal-fired plants to gas, what effect would that have. That probably would be a very good summary because that probably could come up in the future Administration. We did not address that in these eight reports.

And there may be other ones that would make sense.

So if you could get me these comments back, we're asking you to get them back by December the 5th. You know, we certainly want to have as many of these reports finalized before the new Administration comes in so we can get them in the right people's hands.

And I guess if you have had any other questions, I know we got a full agenda, if you would see me after the meeting, we can talk more. Thank you.

EXECUTIVE VICE PRESIDENT BECK: Jackie, are you going to mention the information manual?

I'm sorry, Mike. I didn't mean to step on your INTRODUCTION.

MS. BIRD: I have the easy part of the job.

We also thought what would be useful to the new Administration, new Congress

and anybody else who is interested in the National Coal Council including new members might be a users manual. How does NCC work? How does it function? And just *Excel for Dummies*, it's a pretty boring read until you need to figure out how to construct that chart and drop it into your report.

So, you know, if somebody some night wants to figure out late in night how to get a report going at the NCC, what does the Secretary need to do to initiate something like that, or how do we function, what are our committees, here it is.

Again, along with Jerry, I ask that if you have any comments on this or suggestions that you email it to me by December the 5th.

And this one was a much smaller committee, which is noted in the beginning of the report. It was basically the NCC staff and me. Because there's no policy, there are no recommendations, nothing like that is in this

report. It is simply just the facts on what NCC is and how it functions.

Thank you.

EXECUTIVE VICE PRESIDENT BECK: Thank you, Jackie.

A clear indication that the Council is a purely voluntarily organization because Jackie was the one that proposed it. And since she looked around and saw everybody going the other way, she was elected to work with us to get it done.

Thank you.

CHAIR MUELLER: Thank you.

Next I'd like to introduce our new Finance Committee Chair Mr. Joe Hopf and invite him to come up and give our finance report.

MR. HOPF: Thanks, Mr. Chairman.

As Mike said, my name is Joe Hopf, and I'm the Chair of the Finance Committee.

So I'd like to give you an updated report from the discussions that we had

yesterday at the Finance Committee in the Executive Committee.

In relationship to our yearly audit, the Finance Committee and the Executive Committee once again recommended that the Council retain Chaconas & Wilson to conduct the 2009 audit.

I would so move and would look for a second.

MIKE CROTTY: I SECOND.

All in favor?

ALL: Aye.

MR. HOPF: Opposed?

Secondly, I'm happy to report that as a result of a majority of our membership of the Council over the 2008 increasing our dues contribution from the additional assessment we did, the Council's financial situation has stabilized. The recent financial problems as we've all seen faced by most of us in the country, and indeed throughout the world, continue to challenge that stability. Given that present situation, I would urge all of

you statements have been sent out for the 2009 dues. So I would encourage all of you to pay those in a timely manner.

If we can all do our part, the Council will have enough financial stability to continue us into the future and our mission.

Yesterday the Finance Committee and the Executive Committee approved the 2009 budget for the Council.

And now I'd like to make a motion that the full Council accept and approve the budget. And so I move, and would ask for a second.

Sy Ali: SECOND.

All in favor?

ALL: Aye.

MR. HOPF: Opposed?

Should any of you have questions about the budget for 2008/2009 you can see Bob Beck or myself, and we'd be glad to discuss that with you.

Thank you, Mr. Chairman. That

concludes my report.

CHAIR MUELLER: Okay. Next I'd like to introduce our new Vice-Chair, Mr. Rich Eimer. He is going to introduce the following speakers.

VICE-CHAIR EIMER: Introducing the introducee? Okay.

It's my pleasure to introduce Professor Frank Clemente, who as you've seen already has not only contributed mightily to our efforts around the new briefing papers that we have, but also as the Senior Professor of Social Science and Energy Policy at Penn State University. He is a senior member of the graduate faculty and former director of the University's Environmental Policy Center.

His research specialization is in the socio-economic impact of energy policy, especially on families, minorities, business and communities. He has published over 100 articles in many, many publications including publications like *Public Utilities*

Fortnightly. His social and science publications have also appeared in publications such as *Urban Studies* and the *Journal of Black Studies, Farm Economics* and *Rural Sociology.* His research has been funded by the National Science Foundation, Rockefeller Foundation and the Ford Foundation.

He holds a Ph.D. in Demography from the University of Tennessee, and was the NIH post-doctoral fellow.

Please welcome Professor Frank Clemente.

(APPLAUSE.)

DR. CLEMENTE: Thank you very much. Before I start, Larry asked me to clarify that all the reports from which these papers were drawn are on the website, and you can check them and so forth. And I want to clarify that I was given credit for writing three papers, but I really only wrote one. The other two I edited. I'm not smart enough

to write three papers, and anybody here knows that I'm not. So it was nice of Jerry to give me credit, but I really didn't write them all.

I teach a course at Penn State called Social Problems. And so it's in a gigantic auditorium, and I've got everybody in there. It's a community really. I have a waiting list of about 400 kids. So it's hard to get into the class, and by the time people get in there usually graduating seniors.

And they want to know what's facing them when they get out into the world. And they come in and they sort of anticipate that I'll talk about drugs and alcoholism and all these things that are social problems. And eventually I do. But they're kind of surprised when I start discussing energy so much. Because I think energy's the big question of their generation, one they're going to have to deal with.

How are they going to have the kind of energy that they need to live the life

that they want to live? Because believe me, their goals, hopes and ambitions are not different than the goals, hopes and ambitions that you had when you were in college, and that I had.

So I spend a lot of time talking about that and try to give them my feelings on where we're going in terms of energy and why the United States really does need to face up to some energy realities around the world because to me it's a global picture rather than a domestic one.

I've been talking recently to -- let me see if I've got this right -- a number of different groups. And this is some examples of people I've been discussing. So this lecture I've been looking forward to -- this presentation -- because it gives me a chance to get some quality control. There's a lot of people in this room that know more about energy than me, and about any specific topic than me.

So this is the kind of stuff I'm saying out there in the real world to these kinds of people. So if I'm saying something that you say, hey, Frank, that's wrong, or that needs to be expanded, or I don't think so, well, this is a good opportunity to sort of set me -- and sort of a mid-course correction. And don't hesitate to catch me after this meeting or send me an email because I'd rather have you correct me than have some lawyer who's cross examining me kick my ass on the witness stand. And that's happened many times by the way.

So it's sort of six premises of where I start in terms of my thinking. And basically what we're seeing is unprecedented at the world level. And of course, we've had some changes in the last few weeks and months. But I think overall the trends pretty clear. We're in an unprecedented situation in terms of the demand for energy.

One of my students said, Professor

Clemente, it's like the new industrial revolution. Well, it's really like 18 new industrial revolutions taking place all at the same time. And I believe coal is the primary mechanism or means to meet that demand over a period of time for a variety of reasons. Coal conversion to me is an answer to solving supply problems around the world, and carbon capture and sequestration is the pathway.

I believe that the biggest major contribution that the United States can make in terms of reducing global poverty -- which I think should always continue to be on the table -- and make contributions to climate change -- is to promote carbon capture and sequestration and make it available to the rest of the world even if we have to give it away. That to me would be our biggest contribution that we could make. We have 1.6 billion people in this world that do not have any access to electricity whatsoever. That's five times the population of the United

States. And another 1.5 or 2.5 or 3 -- whatever you want to say -- don't have adequate access to electricity.

I think that we need to have financial incentives in place to promote CCS. I don't think we're at that stage right now, and we need to expand those incentives significantly over the next ten years.

Now the National Coal Council as shown in these papers has already laid out a good conceptual framework in the 2004 report, the identification of what the path should be, and then the 2006 report, we focused mostly on the economic dimensions of it and energy supply, the technological capabilities in the 2007 report. And a lot of people in this room were involved in all of those. And by 2008, we started seeing we've got to hurry up. We can't just sit around anymore and just come up with ideas. And so there has to be urgency of what's going on because this is ongoing at the global level.

Just to give you an idea and remind you of some of the benefits that we came up with, and this comes from working with Tim Considine who worked with me at Penn State and is now Distinguished Professor of Energy Economics at the University of Wyoming -- just assumed that position. And some of the economic benefits that can come from coal conversion since we're talking about the economy so much these days and the kinds of jobs and energy prices and electric power and so forth that can be presented by coal conversion -- what the opportunities are. They're pretty significant.

Now I don't know what the new administration's going to do, and nobody really does. But I guess I've looked at some of the literature that's out there in terms of what President-Elect Obama -- his new energy site of his campaign. And it's really not all that much different from some of the words that we used in the National Coal Council's

reports.

And they did this in about six or eight different variables. And there's a certain amount of parallels in there. Now many has slipped betwixt the cup and the lip. I realize that. And I realize that we may be talking about it next Wednesday, and they may be talking about some Wednesday in 2022. But the simple matter of fact, it's somewhere between next Wednesday and 2022, perhaps. So but there doesn't seem to be that tremendous amount of divergence that we've kind of expected. But this is just where we stand.

I'm a disciple of Joe Paterno at Penn State, and I sort of take people at their word until proven otherwise. And so I'll continue to take that path. It's kind of the high road.

Would be dumb not to proceed along these lines is what I tell my kids because this is what just 2 million barrels a day will do. We can forget about Chavez, and the

Mexico decline, and the North Sea decline. And we could buy some time here back into the 1990s. I mean, it's not an insignificant accomplishment to move toward enhanced oil recovery. These are meaningful numbers, and great opportunities.

But none of that's going to happen unless there's some of kind of incentives -- a regulatory regime which allows the CCS to proceed. And of course, the EIA has come out with a report just about ten days ago. I don't know if you had a chance to read it yet. But it basically says there's not enough being done. And we even heard that this morning as much is being done by the Department of Energy and so forth. Everybody in the room probably thought the same thing I did. That's not enough. You've got to get more in there. There has to be more money.

And it has to be some kind of levelization of -- I mean, what can deliver. That's seems to be the question. What is the

deliverability. And if coal hasn't proven itself by now, maybe I guess it never will.

I focus on this slide a lot in one of my classes too because what I emphasize is energy is good. It's good to have energy. Somehow we've adopted this sort of approach that it's bad to have energy.

And I even read something -- I don't know if I have the quote exactly right -- but James Hansen from NASA said that coal is the enemy of mankind. I mean, what an outrage really.

We know what electricity can do. This is an empirical fact. Societies with electricity, they survive childhood which is no mean feat in a society where 184 children die before they're five years old out of 1,000. The people eat better. They have cleaner, better water. They live longer. They're better educated. Electricity makes the difference.

And the group that it makes the

difference most for -- absolutely without question -- are women and children. It changes their lives. It can save lives. It does.

If you go back and read the literature on rural electrification in the United States, you come up with all kinds of examples of how the lives of farm women and children change. But I don't have to read that. I can speak from personal experience.

My wife and I have eight children. And four of them are adopted from overseas. And they're adopted from places that had no electricity. And one of our boys can tell stories about going to bathroom in a hole in the ground because they had no running water. He can tell stories about cooking in a little hut for charcoal, and not being able to breathe and going outside to be able to breathe. They had no lights. They had no electricity.

When he came to us and he was six

years old, he weighed 34 pounds. And today with the benefits of electricity and all the accoutrements, 20 years later he's a United States Marine. That's what electricity can do for you and the world.

So I don't need anybody to tell me about the value of electricity. I know it. And coal's the cornerstone and foundation of that electricity. All around the world, it has been, it is and will continue to be. It's the basis of those benefits that I talked about on the previous slide. And it will be when over three billion people depend on coal for more than half their electricity. That's the only way they can get that electricity as everybody in the room knows. They're not going to get it in windmills.

And coal's in good places. It's where it should be. These countries -- India has virtually no oil and natural gas. China's in pretty much the same boat. But yet they have these huge populations. And they have

coal. Forty-two percent of the population has 40 percent of the coal. That's pretty good distribution I think. So we have the coal in the right places.

Now if we didn't have that coal -- if we didn't have coal, we'd have to go up to a hell of a lot of energy on other fronts just to replace the coal that we didn't have. I mean, you can see. We'd have to go up like 60 TCF of natural gas if we didn't have coal. We'd have to build 1,000 nuclear plants, something like that. We'd have to come up with a couple thousand Hoover Dams.

See, this is the scale I think people don't quite understand -- the scale that coal brings to the table in terms of its contribution. The scale is gigantic. And people just don't understand. Journalists don't understand. Students don't understand. The public doesn't understand. We're reaping the benefits of a curriculum that has been slowly watered down over two or three decades

in terms of scientific education.

As one of my colleagues at Penn State said that Penn State, it's possible to get a good education, but it's certainly not required.

(LAUGHTER.)

DR. CLEMENTE: And you can see, there's a couple University faculty members and I know they probably would agree with me. We've had this tendency to dilute the curriculum in terms of science and mathematics.

My daughter went to Johns Hopkins University, and I think she snuck out of there with one course in science called Environmental Science where they picked up litter on a road or something like that.

(LAUGHTER.)

DR. CLEMENTE: We're in the context of demand that's unprecedented, as I said in constrained supply. I have a little paper coming out called East of the Suez. I

stole that title from somebody. But it points out basically where the action's going to take place.

And I've been talking to a lot of legislators and stuff like that. They don't really -- and even my students -- they don't want to hear it. They don't want to hear the United States isn't really the core center of the world anymore. But it's not.

Energy world? There's actions taking place elsewhere. And that's just something that -- a lot of the people know it of course -- but there's a whole world out there that's changing, and where the action's going to be. This is where it's going to be in the area of energy. Pretty significant changes taking place.

China has caught on to this already. And this is why I don't think they're going to agree that there's no such thing as clean coal whatever, because this is poverty in China. And this is energy use

based on coal. And you can see the difference.

And we're not talking here about poverty where you don't get food stamps or you've got rent subsidies. We're talking about dollar-a-day poverty. You live on a dollar a day.

Coal has changed the lives of hundreds of millions of people in China and is even held up as an example for the developing world by the IEA, which makes sense, because it has helped their society significantly.

But China is an old story, so to speak. The new story is on the horizon to me. And that's what could happen in India where 400 million people have no electricity, and only 600 and some cooked with watered dung in those little huts I was talking about. And there's three times of the population of the United States doesn't have any refrigeration. They want the same things we do, and they're going to get it one way or another I would

suspect. They don't really care what Al Gore says over there. This horizon to me -- the scale here is amazing to me.

So the world not surprisingly has turned to coal. I got these data from Platts and we've published them in different places. But you can see whether we can get the 53 who can say -- those are probably out of date already. But you can see while we argue about what some governor of Kansas is going to do, and spend 14 months on that, China has already built like 25, 30 coal plants already between the time we even talk about it.

So the world is moving on. And there's one justification for us to develop coal CCS, and this slide has to be it. People are building coal plants all around the world. There's 1600 of them planned or being built. And this is in the context I've just focused on. This comes out of the report that I just issued yesterday I guess, or the 12th that they charged me so much money for.

And just up here, these are sea changes to me. The IEA is recognizing this decline rate which for years everybody said no, no, no. Dan Yergin ran around yet still gets on Larry Kudlow. Still says no, no, no. Well, bull shit. Here comes the IEA.

(LAUGHTER.)

DR. CLEMENTE: Now they're starting to get on board. If you look at the consequences of that, this is what you've got to come up with new oil just in a few years.

But I think this is one of the most interesting that oil is going to cost $1200 by 2030. Now just to give you an idea how much that's a change, if you took the last six reports and you've added what they've projected the price of oil to be in 2030 and added them all up, it would not be $200.

So this is a big change in IEA. Big. I don't think the press picked up on it as much, because they don't have an institutional memory even though they're an

institution. They don't go back and check these predictions. That's why people like Dan Yergin can run around and say oh, oil's going to do this, production oil is going to increase for seven years in a row. And that's what we've got.

This is another one of the East of Suez stories out of my paper. And that is what's happening in other parts of the world and the Middle East.

There's a guy in Texas. I don't know if you've seen it. It's called the land export model. It talks about how these societies are going to be exporting less. And it makes a lot of sense.

And so we can see that incremental use of energy in the Middle East is going to be pretty significant relative to the rest of the world. And they may not be just exporting as much as they had been. They see the added value of building petrochemical plants over there and chemical plants rather than building

them in Michigan.

Now where will the oil come from? This is a busy slide that I actually excluded and put it back in last night after I had a couple of beers.

(LAUGHTER.)

DR. CLEMENTE: I'll put these on my website. But this is what is projected to be from the five areas that are supposed to account for 70 percent of incremental supplies through 2015 are these fives areas.

But if you look at the data and go back and keep a record of what's been canceled, what's not going to happen, I mean, there's no way this can happen. This is impossible. This cannot happen by 2015. We're not going to have this much oil from these areas.

The people are talking about Africa's oil production declining, and Russia too. So I mean, it's much more complex than you read in these Platts News and all that

stuff. There's all kinds of things happening. You've got to put the whole puzzle together as most of you know. So we're not going to get that kind of oil from anybody. That's for sure.

Now, my son is an expert on oil in Mexico. And he has an article actually coming out in December's issue of *Oil and Gas Journal*. And I hate to mention that because he got his accepted while mine was rejected.

(LAUGHTER.)

DR. CLEMENTE: It's the height of humiliation when your kids starting publishing articles in journals that reject your work.

But this is what he came up with in terms of the exports and imports. And you can see, this is another one of those sea changes that's taking place in a stealth kind of way. And of course, this is all due to declining Cantarell, which is falling off a cliff, and they don't have the resources to replace it. They just don't have the money.

They don't have the resources. They don't have the technology. They don't have the people. It's not going to be replaced. End of story.

So what's the United States' problems? I talked to my class and people I go out and talk to when I talk to different legislatures. And the one thing I do say is that that shouldn't happen again, but it looks like we're going down that same path. We're just as dumb now as we were ten years ago I guess.

What's it meant so far? Well, we don't have to hypothesize or come up with guesses. We know what it meant. That's what happened to 2007. Now 2008's here. Who knows? It's going to be bouncing all around.

But the price of natural gas in those days was -- well, I don't know -- $6.50, something like that. It's doing $6.50 today. So we're going to face higher electricity prices. That's for sure. And the more

natural gas, the higher the price is going to be. And we've already gotten to that point already.

So the dash to gas is already whacked us pretty good. Now we're going through another dash to gas right now. And we're canceling coal plants. I don't have to tell anybody in the room that. You all know more than I do.

This is the danger we're facing right now. And NERC had this in 2007. And they kind of backed off on it. I don't know. I'd be glad to talk to anybody why they think they might have backed off on that. But NERC was really on the money here, talking about the danger of all this. And now they just joined a new revolution, I guess.

But that's where we're heading. And I think this is a huge, gigantic mistake that's going to cost us down the road.

We already get natural gas from three sources. And everybody knows that. And

some of this stuff is so elementary, I'm ashamed to put it up. But like I said, I'm presenting what I present to 5 or 6,000 people a semester one way or another. So I'm looking for advice.

We get it from North American production, which I think you could make a good argument it's already peaked. And Canadian exports, and LNG, which is lowering. But we have a substitute natural gas available when we decide to use it. So that's where we get our natural gas as you know.

Now people have talked about another cartel. Well, people say well, you're not going to have another cartel and all this kind of stuff. Well, it's the same thing they said back in the 1970s too. We're not going to have an oil cartel. Go back and check the literature. They're saying the exact same thing.

But regardless of what Alan Greenspan says, you still have this high

concentration in just five countries. In fact, the concentration I think if you did some kind of an analysis on this, probably even higher, because you have two countries accounting for 42 percent of the resource. That seems like a lot to me. In two countries, and neither one of whom are our buddies.

Now there's a group that'd better hope there's no cartel for sure. This is Europe. This is how much gas they import now from Russia. This is what they're projected to import. So that's a pretty significant increase. They're out on a limb.

There's a million quotes. I put this one. The other one is they're walking and sleepwalking. There's all kind of people warning Europe that they could still go down the same path.

Now this shows or at least gives some documentation of my argument that we're not really that big a deal in the big game now

in terms of the future in incremental growth, because this is where we're going to be down here in terms of increases in consumption according to the EIA.

And these other areas are going to be bringing in a lot more or needing a lot more natural gas than us. And the competition is going to be very rigorous. And we're pretty far away from -- we're in the shipping loans and so forth. It costs a lot to send it to us, and particularly send it to California.

But nevertheless and based upon formal predictions at the EIA, we are going to be getting a lot of the natural gas in the future from LNG -- 74 percent or so. We got it previously from Canada. Now Canada you can't count on anymore because guess what? Their natural gas production is declining. So you don't get that from them anymore.

So now you say okay, we'll just balance the equation by -- who knows? This is from EIA. And everybody who knows my work

knows that I've been a big critic of EIA, published a couple articles that have gotten their attention and irritation. In fact, when I met with Howard Gruenspecht and we talked about my research, he said if you're so god damn smart, why don't you do natural gas projections. I said give me $100 million a year and I guarantee I'll do the god damn projections.

(LAUGHTER.)

DR. CLEMENTE: It costs a lot of money these days to build liquefaction plants. And one of the most amazing things to me, if you'd read like page 63 of the California Energy Policy, they're still projecting $4.75 LNG. So I mean, what are you going to do? They've been wrong every year for 14 years in a row.

Now the real argument is not about LNG. I think most people who really fault is that LNG, they're not going to have the LNG that they've projected until at least 2018, 19

or 20, and probably not even then.

So what are you going to do before that? Well, everybody's saying we've got a lot shale gas coming on. And this is a matter of debate. And I was talking to Randy before here. But this is what happened this year. So I don't know what's going to happen in the future.

Independence Hub came on. That counted for some that knew the production. And Retro Pipeline came on. So about 33 percent of the new production was a one time event. It was an event either the Retro Pipeline, or it was the Independence Hub. I got this information from Apache. And Apache doesn't even know. They were just sort of guessing. But we know one thing. It wasn't all shale gas. Okay?

So the projections are iffy as they always are. Nobody really knows what's going to happen and particularly in terms of shale gas.

Now if you read the literature on shale gas and you talk to some people though, go to some meetings, listen to some conference calls, you find out that there's some pretty significant speed bumps coming up on shale gas. And not the least of which is this financial change is taking place. And we now have CapEx cut backs of over 40 percent. At least people are starting to raise questions about waste water.

Aubrey McLendon who may not be the best person to use as his testimony since he lost $1.4 billion in the stock market recently said it's going to be about $10 in terms of going forward -- natural gas. And so these are all these issues that are coming up. In fact, up in my area, I know one guy that has like 75,000 acres and he was going to lease it to some company. I don't know who it was. Chesapeake I think it might have been. And he was delayed because he thought he could get a better price. And he started getting nervous,

so he called Chesapeake up and said I really want -- I'll sign your paper now. And they said well, sorry, we're not proceeding anymore.

So there's a lot of changes taking place in the shale gas business. And nobody really knows. But I don't think we're going to come up with the shale gas production over the next several years that everybody thinks we're going to come up with. And one reason of course is they're cutting back.

But people are still exuberant. We're still a happy society. And we think that we're going to be producing a lot more natural gas even though we're spending a lot less money to produce it. So we'll see what happens. But I wouldn't bet on it.

We were told in 2000 natural gas was going to be $3 the rest of the decade. And then we were told in 2004, it was going to be $4 the rest of the decade. And I say show me the gas is what I say.

And here's Canada. This is what EIA says is going to happen. This is what the National Energy Board of Canada says is going to happen. And so you can see there's not a lot of natural gas waiting in the wings for us there in terms of what's going to be able to be shipped to the United States. There's just not all that much available relatively speaking.

Canada saved us here back in the first half of this decade. Canada really pulled our fat out of the fire without question.

About alternative fuels? Well, everybody here has talked about those, what it's going to take to produce -- if you want to replace coal and Jerry was talking before about replacing coal, what you'd have to do in the United States of course.

And this is something here -- this business about not being able to store electricity. I think this is proof of the

fact we have had this sort of dilution of our scientific education. You can't believe the people that don't know this. I mean I'm talking about people in important positions. They just don't know that. It's like a shock to them that you can't just store electricity and then just pull it out any time you want in large quantities and power Pittsburgh by the way. You can't do it.

So there's an educational gap here. That's really one of the things I focus on. I know there's about 2500 kids at Penn State I believe are getting this lecture. So I'm trying the best I can.

Now Tim and I did a study of what it would take if you -- and then this isn't a study. An idiot could do it out of a EIA data. If you replace coal with natural gas, there wouldn't be any left for anybody else in terms of electric power. You'd just be using it all for electric power.

And Tim did some calculations

saying the cost would increase like -- electricity would increase like 120 percent. It can't happen even. But that's what would happen. So anybody who thinks you can re-use coal -- natural gas to replace coal -- this is an issue of scale again. Scale is another one of these areas I don't think people quite understand how much energy it takes to power all this.

Nuclear power? This is one area where I know a little bit because I worked on nuclear power plants and tried to get them sited back in the '70s. And I'm a sociologist. So I think that the institutional roadblocks on nuclear power are just so huge to me.

Now I have to admit I come from an environment where I gave a lot of presentations on nuclear power back in the '70s. And one time I came out and somebody had thrown a concrete block through my windshield. So I come from a little bit of

nervousness about talking about nuclear power.

But the institutional roadblocks seem to me -- not the technical ones at all of course -- never was. But you think there's opposition to coal -- which there is. There's lots of it. But wait until you start bringing nuclear power into the picture. Entrenched opposition there. It's been around for a long time.

So I don't think nuclear power is going to be a -- there's no way we're going to build 250 nuclear power plants. That's for sure. Three might be good.

Here's a study we did. I stole this data from some guy at Oakland at the DOE Office. He did a study of what wind actually delivered during a heat wave in California. And you can see that in terms of the reading, they would talk about delivery up here -- 2500 megawatts -- and what they actually showed up with in terms of wind is way down here. This is during a heat wave during 2006 in that

five- or six-day period. Pretty substantial differential.

There's a great study that just came out. I just got it when I was walking out the door. I mean, I can't say it's a great study, but it looked great because I haven't read it. I just read the abstract -- executive summary -- by a guy at the Department of Economics at one of the universities in Spain talking about capacity factor for wind and how it's been overestimated for the last ten years. It looks like it's a pretty good study. I'll send it to anybody that wants it.

I got this from Jay Apt who's a Dean at Carnegie-Mellon. These are his estimates on the costs to deliver electricity to the northeast where there's about 55 million people. And you might have your own estimates and I'm not here to argue those. But you look here. This is what wind is going to cost.

Time? I know. He's telling me I need to get my ass off here. I know. I'm on my next to last slide. These guys will be glad to get rid of me.

And finally, I tell the students, you have an ace in the hole. I don't think my generation is going to play it as well as they could have. But you can have a great opportunity to play it. And this is it.

And that's U.S. coal. And there's Russia. There's Iran. There's Qatar. There's Saudi Arabia. There's Venezuela way down there in terms of oil and natural gas. And there's U.S. coal. Right around in there is Illinois.

Thanks so much. I'm sorry I took so long.

(APPLAUSE.)

EXECUTIVE VICE-PRESIDENT BECK: Thanks, Frank.

We've had the pleasure to work with Frank on numerous studies and things.

And you ought to see him in a little group of just six or eight people instead of in front of the whole crew because he really didn't speak his mind at all today.

(LAUGHTER.)

EXECUTIVE VICE-PRESIDENT BECK: And we have the slides available except for the ones he slid in after the couple of beers. But we'll certainly make all those available.

And we probably have time for a question or two as long as he promises to keep his response to about an hour and a half.

(LAUGHTER.)

DR. CLEMENTE: I am sorry I took so long. I apologize.

EXECUTIVE VICE-PRESIDENT BECK: No, that's all right. We actually built it in. I've heard you before.

(LAUGHTER.)

DR. CLEMENTE: I only have one lecture in me.

EXECUTIVE VICE-PRESIDENT BECK:

Yes, right. It's 50 minutes come whatever and high water. Right?

Tom Almeyer has a question back here.

QUESTIONER: Thank you, Dr. Clemente. I appreciate your insightful remarks.

With respect to the potential for wind power and the constraints on transmission capacity, are you aware of any work that tries to extrapolate out and assume an aggressive program to build new transmission capacity of what are the baseload needs of the United States -- presumably wind could ever meet a baseload need -- could wind provide in terms of electricity in the United States?

DR. CLEMENTE: No. I'm not. But that's something I'm hoping to see.

There's a couple papers that just came out on wind but I haven't had a chance to read them. And one of them was done by Texas Public Policy Foundation, which some collected

a good bibliography on that. But if I come across anything, I'll be happy to share it with you.

QUESTIONER: I just -- by way of reference, I'm a lobbyist with Arch. And when you go up to Capitol Hill, there are many, many policy makers, many of which are serious, think there's unlimited potential for wind to meet the electricity needs of the United States.

DR. CLEMENTE: Well, this paper by this guy in Spain I think might be helpful. Of course, this deals with Europe. But I'll send you a copy of that and see if that helps at all. Because his basic point is that you run around. People are saying there's 35 percent capacity factor with wind. And he said that's what we've been saying for years, and the wind industry been saying. But in fact, it's only 21 percent.

This thing I put up by Jay Apt is interesting. He said it would cost $60

billion in transmission lines. I'll send you that article too. I mean, that's a great article. By the way, the title of it is Is Renewable Standard Practical for a United States. And renewable portfolio standard answer no.

QUESTIONER: Professor, Andy Patterson with Econergy.

I'm dying to get your freewheeling remarks on climate policy and what that would do to a lot of your cost curves given the election results. What happens to natural gas prices with a carbon cap, and how else are you going to modify these charts in the offing?

DR. CLEMENTE: Yes. Well, that's something we're working on with Tim. And I do have two papers on that as a matter of fact.

On one we studied the impact of these rising prices relating to carbon capture and cap and trade on Indianapolis, and in another one on Kansas City which I'll send you. They're doubling for sure.

And there's all kinds of impacts that take place, particularly I mean in the minority community. And I talked to the Congressional Black Caucas. And I think I made some inroads with them because the people that are really going to get smacked down are minority populations in these areas. I mean, that has to come out. And it was a pretty good meeting. I've kept in contact with some of those members.

And the impact on minority segments of the population and female heads of households -- that's another group -- are going to be pretty substantial.

So I have two papers on that which I'd be glad to share.

QUESTIONER: Because you're saying natural gas and electricity prices will double.

DR. CLEMENTE: Well, that's what we came up with. Yes.

QUESTIONER: By when?

DR. CLEMENTE: Well, probably I don't know what the data were. But sometimes by 2015, 18.

There's just not enough natural gas. I mean, that's it. I mean, to go back to the other question on wind. I mean, where in the hell is the wind going to come from? I mean, Boone Pickens -- he canceled everything. He even said natural gas has to be at least $9. Aubrey McClendon says $10. And somebody just told me before I came up here, Aubrey McClendon told his stockholders it has to be $14 for him to make a profit.

EXECUTIVE VICE-PRESIDENT BECK: Or it will probably in the next week.

Just in the interest of time, we're going to have to close it down. But Frank, thank you again. And he has been a more than generous contributor to the National Coal Council. So publicly I'd like to thank him.

And in light of the issue papers

that we're talking about doing, we're going to try to work with Frank to try to get those into some of the audiences that he has had the opportunity to speak before. So we'll be working with Frank some more in the future.

So thanks again, Frank. We really appreciate it.

(APPLAUSE.)

VICE-CHAIR EIMER: Our next speaker is James Childress. James is the Executive Director of the Gasification Technology Council, a position he's held since the Council was created in 1995.

He's also the President of Childress Associates, a consulting firm specializing in the analysis of public policy and market issues affecting alternative and emergency energy technologies. The focus of his practice is on gasification and related technologies.

Mr. Childress has had more than 25 years of experience in the energy and

alternative energy issues including working on the staffs of the White House Conference on Economic Development and the President's Commission on Coal.

He also served as the Executive Director of the Congressional U.S. National Alcohols Fuels Commission. He was Research Director for the Council on Synthetic Fuels, and has been in private practice since 1985.

Mr. Childress has a B.A. Degree in Political Science from Wabash College and a Master's Degree in Urban and Regional Planning from George Washington University.

Please welcome James Childress.

(APPLAUSE.)

MR. CHILDRESS: Thank you very much. Good to be here.

A formidable challenge speaking after Frank. But what I will do is give a gasification centric focus in presentation this morning. I was asked to address SNG and CTL production using gasification. And that's

what I'll have my laser-like focus on.

I'll give you the message right now if you want to leave early. And it's what Frank said. In the U.S. given public policy directions, given regulatory directions, given market directions, we see the demand for natural gas headed way north. We see the price following that. And given our potential customers downstream from gasification, which is the chemicals, fertilizers, SNG, and fuels markets, we see a very strong growth in the U.S. for gasification technologies to provide competitive products in a high natural gas price environment.

I will say this, the title of the organization is correct -- Gasification Technologies Council. Early on it was Gasification Research Council. Our members do research. But the 80 companies involved in our organization are involved in all aspects of providing technologies, services, owning and operating commercial-scale gasification

plants in the U.S. and around the world.

First slide. Why CTL? And these first two slides I want to make another point that's very important. In the national energy debate, every advocate of every narrow pathway to the future, that is if they're talking about solar, if they're talking about wind, if they're talking about increased domestic drilling, they always promise lower energy prices. I personally don't buy that. Our members don't buy that. What it does offer -- what gasification will offer is lower increases in energy prices as we go into the future.

And let me give you an example. I run the risk of angering people here. It's a political issue. I call it hoax versus reality. I have two things here. Drill here, drill now, and pay less -- political slogan. It's also a book by Newt Gingrich. Bright fellow. He's an excellent speaker, an excellent thinker. He was the keynote speaker

at our meeting here in Washington last month. But when I saw him make his presentation on this release at the American Enterprise Institute, flowed very well, very nicely. The logic is all there. But pay less is overpromising. You cannot delivery that.

And the irony is Al Gore says the same thing about his wind transmission system in the United States. Solar people say that. Ethanol people say that. We're not going to pay less.

And why are we not going to pay less? That's the second item. *The Wall Street Journal* October 30th, excellent article. Chevron project offers glimpse of future: more work, less oil.

Why did I have those two juxtaposed? Because Newt Gingrich in his presentation at the American Enterprise Institute cited that Brazilian oil field as a perfect example of why we're going to be getting more oil off the coast of the U.S. if

we do it. And I think we should, and I think we will.

But it's going to be smaller fields. It's going to be more expensive oil. This is heavy, sour oil. This is not easy stuff to process. So you're going to get 85,000 barrels per day, not of Fischer-Tropes liquids, not gasoline from coal gasification methanol to gasoline. It's going to be heavy, sour oil that you're going to have to transport somewhere to refine, and then transport it to your markets.

In the U.S., we had the opportunity to gasify U.S. coal resources -- PetCo -- some biomass but not a lot, mine mouth and ship that product -- a clean product -- right to markets, not too far-removed from U.S. coal fields.

I hope I don't ruffle any feathers here, but it's an important point to raise. Future energy prices are not going to be cheaper by anything we're talking about in

this room. And if they are -- and that's why the current recession is slowing down everything -- if they are cheaper, we're going to stay stuck with no economic growth. But there will in the future be no lower oil prices, or lower energy prices as a result of anything that we're doing. They're going to be less expensive. That's the way I like to refer to it.

Okay. What I'd like to do very briefly is give you an overview of the gasification industry. A lot of people don't understand it. Coal gasification is an important aspect, but there are a lot of other products, a lot of other feedstocks. I'd like to tell you what those are, where they are and where the growth is.

Frank did an excellent job. I'd call it the rush to natural gas. He calls it the dash. He said potato. I say potato. But that's what's happening. It's the movement toward higher natural gas demand in the United

States.

And then I'd like to talk about what I call the gasification response, which is the slate of products that gasification makes possible, competing basically in a high natural gas environment, and a high oil environment, and also offers better prospects for carbon capture and storage because of lower costs of carbon capture and storage if you use gasification to make these products.

And again, my slides I assume will be available to everybody.

This is based upon a survey we did in 2007. I'm hoping to update it next year. But it's a snapshot of the growth in the industry 2004 to 2007. You see the number of operating plants, the number of gasifiers, capacity growth, feedstocks. Let's dwell on this a bit. Coal is the largest. And in growth, coal is also going to be the largest. And petroleum residuals are listed. And in the U.S., some of that's going to be some Pet

Co. And the products.

The hit on gasification when we've talked about IGCC in the past and people in the power industry as they're saying well, it's a chemical industry process. Well, historically it is. You'll see that. Which accrues to our benefit now because that's where the market is headed. It's in nonpower applications. And there's a lot of experience around the world and in the U.S. gasifying various feedstocks to make a range of products.

So it's the sweet spot. We're set to move into that market. Not to say there won't be IGCC in the future. But it's a higher cost option. Any power generation and either pre-combustion or post-combustion CO_2 capture is a high cost option. And that's why we're seeing the markets moving in a direction away from IGCC, but with some important IGCC developments going on.

Geographical distribution. What I

want to get the point across here is that Asia is very important, and Asia is growing. Africa and the Middle East is a little misleading. The red coal is generally in the South Africa. The yellow growth -- that's the pearl GTL product in the Middle East in Qatar.

So they literally gasify natural gas to make syn gas, to make the Fischer-Tropes liquids. But drop Africa and the Middle East off of there, and you'll really get a good picture of where the world is in solids gasification today and going forward.

Okay. Where's the growth? Let's get down into it a little bit more.

Shares of growth. This is for the period 2004 to 2010. The differential in the time frame, you'll notice we went from 2007 to 2010. That's because we did some supplementary work on adding some newer projects in. Given the fall off in some of the projects because of the economic situation, it may be a little lower.

But 81 percent of the growth over that six-year period will be in Asia. I have that long leg there. That's one oil sands project in Canada, but they're using gasification of residues from the project to basically inject steam SAGD -- if any of you are familiar with that. It's a cleaner way of extracting bitumen in the oil sands projects. I think that's the future of oil sands in Canada. But it's one project right now. But I did want to highlight it there because I think going forward, it resolves a lot of environmental issues with regard to oil sands mining in Canada.

This is it. This is the score card. I wanted to put this up here to be as simple as I could.

(LAUGHTER.)

MR. CHILDRESS: For those of you who like baseball, football or anything, plant start-ups projected between 2004 and 2010 in the U.S., it's 29 to nothing. I actually

think that 29 may be low. Shell and GE have announced a number of additional plants that are not just licensed but starting up ahead of schedule. And when we redo the database next year, I think it's going to be bigger than 29 to nothing.

U.S., we are going to see some start-ups. We're going to see Edwards Port, I hope, somewhere in the 2012. Is 2012 realistic or a little farther out? And one or two others.

But again, it's lopsided. China has figured it out. I'll very briefly say why they've figured it out. As a matter of national policy, Frank I think showed the reserve bases. China has no oil and natural gas to speak of. And they've made the decision they're going to use their coal resources. And they're going to use them for burning for power. But they're going to use them for gasification to produce fertilizers and chemicals. And that's exactly what that

29 is comprised of. Huge industry.

Also what's not on there -- and I don't even address it in here -- China is developing its own gasification technologies. We have had two presentations at our conference over the last two years. The East China University on Science and Technology -- ECUST -- remember that name -- has developed a gasification technology that they're now -- I think they have something like 15 projects in the pipe line to use that technology. And I think the end result is going to be less use of western technology -- and right now it's Shell and GE -- and more use of domestic Chinese gasification technologies.

I believe they may run into a problem with regard to the intellectual property problems if they try to introduce it in the U.S. But China's a big market, and they're going to be using that technology more strongly in the future.

Okay. Let's talk about the issue

that Frank brought up. And this really gets to the heart of it as far as this audience is concerned because this is where gasification is what I call an enabling technology for U.S. coal resources to play in markets outside of traditional power generation.

List of factors. Frank brought it up. You're all aware of it. Except coal opposition is not just a pulverized coal plants. It's IGCC also.

There is a religious movement coming out of the environmental community, coming out of some other communities, especially in Appalachia. They don't want coal mined. They don't want coal used. And it has now spread to include IGCC. It's coal period. But it's also CO_2. And it would impose costs on IGCC that put it even farther at an economic disadvantage.

So what we've seen here is coal opposition spreading to IGCC. There has been pullback on a number of IGCC projects. And as

a matter of factor, a number have morphed into SNG projects. And they make more economic sense, as I'll get to shortly. But the bottom line there is the path of least resistance for power generation in the U.S. then becomes natural gas.

I don't mention wind in here. But I think the coal industry ought to embrace wind generation. It sounds a little crazy. But anybody who's going to do wind is going to increase demand for natural gas. Anybody who increases demand for natural gas is going to raise the price. And you have entree for coal gasification either in SNG or in products such as fertilizers and chemicals.

It's several steps of logic down the road. It's not going to happen overnight. But I think that's going to be the ultimate outcome of increased wind generation construction in the United States.

So your natural gas prices are going to go up. We get by the economic

downturn we're in now, and I'll address that. Long-term natural gas prices are headed north. Natural gas-dependent industries and consumers -- the fertilizer industry, the chemical industry, homes and industries that burn natural gas -- are going to feel the impact. Gasification becomes a competitive alternative in that sort of market environment.

EIA. Let's whip them around a little bit more here today. This is the 2008 Annual Energy Outlook. An unrealistic projection. And this is 2007 to 2020. Unrealistic projection for increases in coal use given what I call the moratorium. Unrealistic decrease -- decline -- in natural gas use given what we see happening as far the alternative to coal.

And renewables is going flat out. They're doing everything they can. But you've got a gap there. You've got almost a -- I think it's a four quad differential that has to be met by something. And that something is

going to be either natural gas or demand destruction. People will just stop using energy, electricity or whatever.

But there's a big shortfall there that's a natural for natural gas. No pun intended. And that's the niche that I think gasification-based products can fit into.

So here it is. In a statement, in a carbon-constrained world, I believe there's going to be growing demand for gasification in the face of rising natural gas and oil demand and prices, and concern over energy imports.

Key sectors, as I've mentioned, chemicals, fertilizers -- we're already seeing this. We'll address it in a minute in a map here.

Refinery Polygen -- for those of you who this is a little bit outside of coal and power. That's refineries gasifying Pet Co resid to make hydrogen which they need because of the heavy crude they have. Some electricity. And there are refineries that

are looking at producing fuels -- Fischer-Tropes -- or methanol to gasoline as part of their product slate.

Conoco Phillips at our conference here last month announced a proposed gasification project in their Sweeney refinery in Texas. Large project. And it's going to do all of these things. Primarily they need the hydrogen for the refinery.

And finally, getting to the item I was asked to address which is fuels, i.e., motor fuels, and substitute natural gas. We are seeing very, very strong movement towards substitute natural gas. As I mentioned, a number of IGCC have morphed into SNG.

It is fungible in natural gas pipeline systems. You don't need another transport system for that. As a matter of fact, Strategic Energy -- where is Bill Hoback -- in Illinois just announced a contract with one of the pipeline systems in the Midwest for capacity for their SNG plant that they're

developing in Illinois. Matter of fact, I believe those gasifiers from Siemens are on the boat. They're ready for delivery. So that's some good news. So SNG is a growing market.

Fuels. Motor fuels production. The environmentalists hate it. But it offers an opportunity because as I'll get to very shortly, when you go either the Fischer-Tropes route or the methanol to gasoline route, or a number of the other indirect motor fuels routes, you're producing a relatively pure stream of CO_2. And depending on where that plant is located, you have enhanced oil recovery opportunities.

Or if it's not EOR, you at least don't have to go through a separate step of extracting CO_2 from the syngas stream. It's there. It's there for the taking.

Ninety-plus percent of the gasification capacity in the world today is what we call industrial gasification or

product manufacturing. And I won't go into the technical details, but as part of that process you extract the CO_2 because your downstream processes don't want it. And today, it's vented because there's no economic reason not to vent it or regulatory reason not to vent it unless you have an enhanced oil recovery opportunity. And those are fairly rare where these gasification plants are located.

So this is the way the gasification market is headed int he United States. I think it provides a big opportunity for the coal industry. Mine mouth gasification plants producing products. If you can find a CO_2 buyer, you're even in better shape.

This is it. This is a repeat.

That quote is a quote -- our executive committee met in Houston just earlier this week to go over plans for the next year budget-wise and for our conference.

And that's a direct quote from one of our member's major gasification supplier -- one of the two major gasification suppliers. And that's a quote. They have no planned gasification based U.S. project without a CCS element built into it.

This says it all. This is why. This is why gasification is a player if you're in a carbon-constrained world. These are numbers that were done jointly by MIT and Eastman Chemical. And those are the carbon capture and compression costs. Okay?

This is not talking about storage. This is getting the CO_2 ready to put into the ground. This is the differential in dollars per metric ton of CO_2 captured and compressed and is ready for storage. And you see the declining costs there as you introduce gasification. First IGCC. Then coal to liquids. Then so-called industrial gasification. And that is an Eastman term of art basically for their chemicals production.

The off shoot here is a map of proposed U.S. gasification projects. There are 28 on there. I could put 60 on there, but you can't look people in the eye with some of those.

This is my judgment on the serious gasification-based plants that are proposed in the U.S. Will they all go forward? No. Will some of them go? Yes. But of those plants -- now this is not a capacity-based pie chart. This is a number of plants-based pie chart. We haven't done the capacity numbers because we don't know enough about a number of these. But as you'll see, IGCC only accounts for about a quarter of the number of plants in the U.S. that are on that prior map. Seventy-five percent of the planned U.S. gasification-based plants are going to produce fuels, motor fuels, chemicals or SNG. And that SNG wedge could get even larger I believe.

It's a fungible product. Easy to get it into the pipelines. The price is going

up. And you're competing directly with natural gas. And it's a low cost, carbon capture and pressurization alternative, as are all of these except for the IGCC.

Public policy. And I'll say this before I introduce this slide. Our organization does not take a lot of policy positions because there are a lot of different perspectives on things, except I'll mention one because the EPA UIC proposed rulemaking, we are going to have comments on that. It's very important to our members on regulating -- the EPA regulating through Water Act injection of CO_2. So we will have comments on that. And I'll be happy to share them with you folks of the Coal Council. I think we're going to have them ready to go Monday.

But public policy. This is Jim Childress on the telephone and in conversations with people that -- and some of these things have the flavor of what do you want. Well, we want it all. It's that

attitude. But there's a feeling among our members that given the current economic situation, you're going to need some sort of public sector financial and policy support in the U.S. for gasification-based plants to go forward.

There are a small handful that are far enough along they may be okay. But I think for anybody in the front-end engineering and design pre-feed right now, they're going to need some sort of financial and/or policy support.

There needs to be construction and operation of commercial scaled gasification manufacturing plants in the U.S. with CCS. This is for reasons of public acceptance. This is for reasons of commercial acceptance. And if you want to read it in there, it says that includes IGCC. And I hate to use the future gen word because there are all sorts of people all over the map with it. I believe there's a fairly wide support in the industry.

We're not going to put any GPS coordinates on this. But we will say that something needs to be built and operated at a commercial scale, or close to commercial scale for power generation with CCS to get things moving.

And I see Ric over there. I was looking for you. I saw your name on the list. And I see you laughing at me. But that's okay. That's what I'm here for.

And then there need to be incentives for industrial gasification that recognizes its contribution. That is it's a lower cost alternative to CCS. And we believe industrial gasification should be recognized either with tax incentives or other financial incentives, and regulatory incentives, which gets to the third item there -- fourth item.

Uniform national policy -- not state-by-state policy -- on carbon regulation. Regulation of emissions, incentives, liability issues, which came up earlier, insurance issues. All of these for early adopters of

gasification with CCS.

We had a full morning at our conference in October on this whole issue. The conference -- we're a partner with EPRI -- and the history of the conference has been what one of our members calls on bricks and burners -- on a lot of the technical and reliability issues. But there's more and more interest on these types of policy and regulatory issues, as well as project finance issues that are important to people as they are moving toward commercial scale plants.

And then I personally feel we need a cease fire. I call it the zero-sum energy war. Make your case for whatever your technology is, or your path is. But leave everybody else to make their case. And don't try to plead your case by stepping on somebody else and misrepresenting important aspects of a particular technology or approach. It doesn't help anywhere and it leads to confusion.

Key unknowns. And this is from the gasification industry. This is a no brainer. How long will this economic downturn last? And how bad will it be? Because everything has stopped in its tracks, or virtually stopped in its tracks.

The silver lining is capital costs, construction costs, steel, concrete, engineering, labor. That's cooling. The rise is cooling. Some of it's reversing. But I don't know if that silver lining compensates for where we are right now in the economy.

And the other one is the direction of national carbon policy. Something has to be done. I think that's going to happen later rather than sooner, given where the economy is today. But there has to be a clear policy on carbon. What do you have to do? What level of emissions reductions do you have to achieve? Cap and trade? Do you do this? Do you do that? It has to be clear, and it has to be unequivocal. And everybody has to know

what the rules. And the rules have to apply equally across the board.

So with that, I will end. And if there are any questions or comments, there's my email address.

You see our website. I invite you to that. We try to make it information rich.

But I'd be happy to answer any questions except for Ric Fenton.

(LAUGHTER.)

EXECUTIVE VICE-PRESIDENT BECK: Thank you, Jim.

First of all, I was privileged to be at the Gasification Conference that Jim and his operation held about a month ago I guess here in D.C. We think we have a good crowd when we fill the room and have about 80 people. What did you have? About 2,000 or something like that?

MR. CHILDRESS: Just under 1,000. Just under 1,000.

EXECUTIVE VICE-PRESIDENT BECK:

Well, they filled a ballroom up at the Wardman, which was pretty impressive. So it's quite an operation. So the support for these kinds of comments is widely held within the industry.

And with that, I'll shut up and see if anybody does have any questions for Jim, except Ric and Tom.

Oh. Tom does have a question. I'm sorry.

QUESTIONER: Thank you, Jim. Tom Almeyer with Arch Coal.

The section the Congress last fall passed tax incentives -- Section 48a and 48b. 48a was power generation, the required CCS is 65 percent for industrial gasification, 75 percent. You showed that the analysis by MIT and Eastman Chemical. Have you seen any cost curves with respect to percentage of carbon capture? We have been trying to educate the Congress about the fact that when you put the hurdle rate that high, you may not get

projects because all those are are really research projects. They're not going to be commercially viable. Have any of your members done anything on that?

MR. CHILDRESS: I have not. But we may in fact try to put something like that together.

I don't know -- Stu, have you folks done much on that?

But not a lot. It has to be done.

Of course, as you know and as I know, there's a lot of gaming always going on both in drafting legislation. And then once it's done, people get creative in how to achieve that percentage.

But no, it's a good point you raise. And it's probably something we ought to be doing.

QUESTIONER: Thank you.

EXECUTIVE VICE-PRESIDENT BECK: Maybe time for one more. Anybody else? Dick.

QUESTIONER: Dick Bajura, West

Virginia University.

This is going to be a rambling question that deals with coal to liquids. And we've had these stories that say we can produce coal to liquids at say $50 a barrel. Let's assume that's true. Let's assume that the oil goes back up to $140 a barrel.

You made in your comments the assertion that the price will not go down. Would there be an argument that would say well, yes, we agree the price won't go down because the last barrel wouldn't determine the price, but if we did that technology in this country would it ensure more economic or energy security because supply would be there? Would that be a fairly good argument?

MR. CHILDRESS: Well, it's a good argument. And let me say this. Let's say we build a coal to liquids plant in the United States, and if I invest $5 billion in that plant, I'll sell that at market levels. I'm not going to be a good citizen and sell it at

75 percent of market levels. That's the first thing.

The energy security issue, I don't use it a lot. And the reason I don't use it a lot, I talk about supplemental supply. I talk about diversity of supply because I don't think we're going to produce ourselves out of an interruption for instance. If Ahmadinejad decides to take all of his oil wells with him and twilight of the goods, I don't know.

But security, I don't use that. I view things as being supplemental and as giving us additional supply. And it's nothing you can prove, but the price of oil, natural gas or whatever won't be lowered. You know my philosophy. But it probably is going to be less expensive than it otherwise would have been. How much? I don't know.

But the whole energy security argument, and I've been this town for a while, intellectually for me I have trouble convincing myself that the nation's more

secure because of one coal to liquids plant.

EXECUTIVE VICE-PRESIDENT BECK: Thanks, Jim.

In the interests of time, I know we've probably got several other questions. But your email address is up there. We will have the slides of the presentation available. We'll send that out to folks. And I'm sure Jim would love to chat with you either electronically or actually using the telephone.

So we appreciate you coming. And thank you for your time and effort.

(APPLAUSE.)

VICE-CHAIR EIMER: Thank you, Jim.

Our last speaker is Harold Quinn. Hal is President and Chief Executive Officer of the National Mining Association. The National Mining Association is the national trade association for the U.S. mining industry and represents coal, metal and industrial mineral producers, mineral processors,

equipment manufacturers and other supplies of goods and services to the domestic mining industry.

Mr. Quinn brings more than 20 years of experience to his current position. And he has represented mining's interests before the Executive, Legislative and Judicial of government in a number of positions both with the NMA and its predecessor, the National Coal Association.

He served with the U.S. Department of Interior in various capacities and is an attorney with the U.S. Department of Labor. Mr. Quinn is a graduate of Dennison University and received his law degree from Wake Forest University. He is admitted to practice in North Carolina and the District of Columbia and before the United States Supreme Court, as well as various federal courts around the country.

Please welcome Mr. Quinn.

(APPLAUSE.)

MR. QUINN: Thank you, Richard.

Good morning. I appreciate the invitation to be here this morning to address your meeting.

I thought what I'd do is try to cover a little bit about recent elections, what they may or may not mean, and then touch upon a few of the issues that are very important forefront on all our minds here.

You see a number of members of not only NMA staff. Let me introduce Rich Nolan in the back who's our Senior Vice President for Government Affairs, and leads our advocacy efforts. Luke Popovich with our Communications Department.

I also see a number of members of our extended NMA team here. In fact, I think I saw a few of you yesterday in Florida when I was down here at another meeting. So I'm glad you all made it back.

Probably by any measure I think it's difficult to argue that this recent

election is certainly historic in several levels. First, this is the first Presidential candidate since Jimmy Carter actually winning a majority of the popular vote. Second, we also have only twice in this particularly century -- or the 20th Century I should say -- did the same party actually have back to back victories in two ensuing election cycles. In 1930 and 1932 and 1950 and 1952 for Republicans, and the earlier '30 and '32 was the Democrats.

Now with the Senate picking up six seats for the Democrats, clearly they're closer but still short of their magic 60 for a filibuster-proof margin. But that's not to say that 57 or 58 is de facto filibuster-proof margin as they can take a few of the more moderate Republicans.

In the House, we had a 21-seat pick up for the Democrats. That's clearly shorter than some predictions of 30, and some predicting optimistically a 40 at one point in

time pick up in the House. Nonetheless, we can't say anything but the fact of the pathway for the Democratic party and their agenda is much clearer and much easier.

On the Presidential level in the Electoral College, we also saw the President-Elect Obama pick-ups not only hold the seats that John Kerry and Al Gore won in the previous elections, but he picked up seven that formerly went for President Bush. And some of them very notable from the standpoint of coal as well in Colorado, Florida, Nevada, North Carolina, Ohio, even Indiana and Virginia as well.

Now does this all translate into a mandate? I suppose it would be difficult to argue it doesn't. I think the real discussion is what is that mandate. What specifically is in that mandate?

I think Speaker Pelosi's recent comments need to be kept in mind that in fact this President-Elect comes into office

probably with the highest expectations in our lifetime. At the same time, with the recent events, he'll have to pick and choose and craft his agenda very carefully.

And to be successful, at least in my view, it will have to be coherent plus relevant to the public's needs and concerns. As we know going into the election and coming out of the election, the number one concern was the economy. And that is even before we had our much noted financial meltdown this particular fall.

So with that in the forefront of everyone's mind, the question is what is the President's agenda -- at least what he spoke about during the campaign -- and what some of the other constituencies of his party, what remains on the table. It seems to me with the financial considerations we have right now and the bailout plan that the fiscal restraints that come with that with first a $700 billion bailout and probably soon to reach a trillion,

we talk about another stimulus package in the near future, a number of the plates on that table are not going to be served, so to speak.

We have, for instance, during the campaign promises for tax cuts for the middle class. We have health care reform. We have energy independence. We have immigration. We have education and funding for education. We have obviously the reform and regulation of financial institutions. So how does the President, and how does his party sort through all that?

I'm not here to give too many forecasts on that. You're going to be hearing and reading a lot about that in the coming days. We've already seen that a lot of that is really idle chatter. Maybe some of that is actually signals from the administration. But I think it's a lot of speculation at this point in time.

No matter what, even with coming into this particular Congress with the margins

they have, many of the folks in the Democratic party are going to be -- what's looming large in their mind is the 2010 election. So that may very well moderate what their particular views are as well as their priorities and what they decide ultimately should be part of that mandate.

But we should also remember that there's really two pathways to achieving your agenda. There's obviously the legislative pathway, and a number of variables even though the margins may be different. There's also a regulatory pathway. And when you control the Executive Branch, your flexibility might be more limited. Your authority may be more limited by the law. But certainly the variables and the potential impediments are lower since you control the House so to speak, and you control the levers.

And so the regulatory pathway as much as the legislative pathway will be the focus of our attention as well. In the near

term, the regulatory pathway will be a big focus for the National Mining Association and the coal industry.

There are a number of policies that are under consideration. They're very important to the coal industry. They will be portrayed as midnight regulations or last minute decisions. But they are not. All of them have been under consideration for a considerable amount of time. And some of them were actually initiated during the Clinton administration. But as a testament to our very efficient regulatory process, it only takes eight years to actually bring them to closure.

(LAUGHTER.)

MR. QUINN: So be remindful of the fact that when these come out and are criticized as last minute decision, in fact they are long term and very deliberate decisions. They're very important to restore and maintain the type of regulatory and public

policy stability that this industry needs to attract investment and sustain the high family wage jobs that it supports.

Let me turn to two issues -- energy and climate. Very important. They're both linked, both as a pragmatic matter and as a political matter. And at some point in time, these two double pathways to success may come into play particularly when it comes to climate.

Now what we do know about these issues, we do know the President-Elect's positions on climate, on the cap and trade program. We also know his positions on energy independence and largely built on renewable energy and green jobs. What we don't know is how he is going and how his party will pursue his objectives.

For renewable energy, renewable electricity standard, it could be two at tranches. It could be one. He might perhaps go for a ten percent and then seek out a

larger 25 percent objective as part of fuller portfolio of climate change policies.

In climate in terms of what looms in the background, one particular thing is this regulatory pathway. We have the Supreme Court's decision from last year that declared that carbon dioxide and greenhouse gases linked to climate change indeed qualifies as pollutants under the Clean Air Act. And then it's up to the Administrator of EPA to make the decision of whether that linkage is sufficient to make a finding that would then trigger regulation of carbon dioxide and other greenhouse gases through the existing Clean Air Act.

The one advisor to the President-Elect has already indicated that set down a marker that suggests that they will give the new Congress about 18 months to figure out how it wants to proceed on climate. And if that is not successful, then perhaps the hammer will come down through existing regulatory

mechanisms under the Clean Air Act.

As you all know I'm sure, the Clean Air Act is hardly a suitable tool to address this complex problem. We don't need to go through all the reasons why. But a recent example that I might add is the recent decision on the Clean Air Interstate Rule. If we can't even have a flexible approach -- well, let me start with this. Many of us should recall that the Clean Air Interstate Rule was really a regulatory surrogate for what was supposed to be the multi-pollutant piece of legislation to deal with emissions from power plants. And when that was unsuccessful, this administration used as much flexibility as they could in the existing Clean Air Act to come up with a suitable and rational and more efficient way to address these issues as well as have some collateral benefits for other pollutants like such as mercury.

Now when the Court looks at the

Clean Air Act and says this doesn't really cut the mustard legally with respect to the type of flexibility they're reading into it for NOX and SO_2, can you imagine what the battles will be about when it comes to carbon dioxide and other greenhouse gases and mechanisms to lay out there for that?

Nonetheless, it seems that this President-Elect's advisors have indicated that that is a tool they'll be very ready to use. And as I said before, I'm not going to predict when and where or how to do that, but it certainly been signaled that they would.

When it comes to technology which is a big part of the answer to our particular climate challenges, the President-Elect has some proposals to deal with providing funding to accelerate technology, both renewable as well as other clean coal technologies. I know that that's a really key part that we need to pursue.

So when I see it coming out in

terms of if I need to step over and try to suggest a couple of pathways here, what I see at least early on is if these issues are going to be taken on by the new administration. It'll probably be in some several pieces here. We could see in RES, and we could also see some other funding type of programs for development and encouragement for renewables, as well as clean coal technologies. Anything they got scrapped up in the green job wrapper probably has potential to get some headway int his particular Congress.

Now when it comes to energy and it comes to climate, let me just walk through a couple points here about what coal has to offer on that score. And I know I'm really preaching to the choir here in terms of this room because you all know the profile in terms of what coal provides and in terms of the energy backbone from mine to market. It is the energy backbone of our country. It provides 50 percent of our electricity, and is

predicted we'll be needing up to 54 percent by 2030 with a growing and expanding need for more electricity in our economy. It's efficient. It's affordable. It supports high-paying family waged jobs throughout the coal value chain.

Now when it comes to the climate challenge itself, let me just pick from a couple comments my past chairman, Jim Roberts, the Chairman-CEO of Foundation Coal made last fall. And I think these are important. These are part of our message going forward with respect to coal. He appeared last fall in front of the Senate Energy and Natural Resources Committee on a summit dealing with energy and climate concerns. And some of the points he made I think bear mention here.

First, he made the point that I touched upon that coal is not merely important, but it's really an indispensable source of energy not only in the United States but the world -- worldwide. And clearly our

electricity and the reliability of an infrastructure that we have in this country that's the envy of the whole world relies on that.

The second point I think worth focusing on for a moment is that those who argue that decreasing use of coal and addressing climate change concerns are irreconcilable are really on the wrong side of this particular debate. Because what is really irreconcilable is trying to address climate change without supporting full bore development of more clean coal technologies and specifically carbon capturing and storage technologies.

Now Jim Roberts is not the only one who believes that. Recently the International Energy Agency has come out with some analysis that makes the same conclusions. In fact, one of their policy advisors has recently stated that it's clear that without coal and carbon capturing and storage, climate

policy will not be successful worldwide. And second, it appears that over the long term that coal with carbon capturing and storage is going to be the most affordable low carbon energy source in the world.

So those are two things that are several points that need to be remembered, and policy makers need to take heed of as we move forward on these issues of energy independence and climate change policy.

But one of the third points is not only in terms of we need more accelerated funding and more involvement and assistance from the federal government in terms of funding for research, development and commercialization of this promising technology.

And we also need to get over this argument -- or false argument -- by some that until the carbon capture and storage is actually deployable on a commercial scale, it should not be having any more build-up of our

full base generation in this country. It's important I think to remember that like any challenge and any technology, we've got to walk first before we can run. It's very important that we built several IGCC plants without CCS before we even are able to build them with CCS.

And in terms of carbon capture and storage performance standards, we certainly need to be able to build a few out there and test them and see what the reliability and operational considerations are with 20 percent capture before we jump to something 65 percent capture. But many of our opponents are basically putting out on the block there a standard that is really going to be difficult to achieve in the short term, and they realize that. And that's their answer to stopping our particular source of generation from coal.

It's either like Jim Roberts' analogy along these lines is he told the Senate at that point in time, Michael Phelps

would not have won eight Gold Medals in Beijing if years ago he had not been allowed in the pool until he was able to set world records. And that's really the message we have today.

Now I'll refrain from offering any other forecasts about this administration's first 100 days or the Congress. I'll call upon that great philosopher Yogi Berra who said that making predictions is always very difficult, especially when it's about the future.

(LAUGHTER.)

MR. QUINN: But what we can talk about is returning to the new Congress and the new administration, there are many new faces out there. We have eight new faces in the Senate. And we have about 53 new faces in the House. So those new faces are new opportunities for all of us to educate about coal, educate about our role, and educate about our value and our indispensability for

our future, not only for the coal industry, but for our nation and the world itself.

So I look forward to working with all of you as we try to advance that and bring some of these faces -- these new freshmen -- through the whole university in the coming year.

Thank you very much.

(APPLAUSE.)

EXECUTIVE VICE-PRESIDENT BECK: Thanks, Hal. We appreciate it.

A question or two from the members of the Council or you need to head out?

Anybody on the Council have any questions, comments, any thoughts for Hal?

(No audible response.)

EXECUTIVE VICE-PRESIDENT BECK: All right. Well, we thank you for your time and for coming over. Good luck in the new job. I know you've been there for years and years. But congratulations and good luck as you lead the Association forward. Thank you.

(APPLAUSE.)

EXECUTIVE VICE-PRESIDENT BECK: Before I turn it back over to Chairman Miller, I just want to make one announcement.

The United States Carbon Sequestration Council is kind of a new kid on the block. For those of you who are not aware, it's an education and outreach group that is working in the CO_2 sequestration area. And it was actually formed just a little bit ago. It's only about a year or so old.

But one of our old friends -- a fellow named George Rudins -- is one of the key players in that group. George was here earlier. Many of you may have seen George. He's a former principal deputy assistant secretary for fossil energy. And they have a left a few flyers out on the back table for you to take a look at.

They've done like we have some issues papers. And they've four of them that address carbon capture and storage. So on

your way out, you may want to pick one up or take a look at it.

I talked to George and agreed that in the future from an educational standpoint, we ought to try to work together and sort of get of make sure that we're reconciled in terms of what we're doing instead of kind of tripping over each other out there. And I don't think that will be a problem because he's an outstanding individual.

So I just wanted to make that known to folks on the record so that on your way out you get a chance to pick up some of that information. And I'm sure -- give me a call or shoot me an email if you want to get in direct contact with George. I'm sure he would be more than happy to visit with folks and do a better job of explaining what the group is all about. Thanks.

CHAIR MUELLER: Thanks, Bob. And thanks to all our speakers today for taking the time. A number of very interesting

topics. So thank you again.

This meeting is duly authorized and publicized and open to the public. The public can submit comments to the Department of Energy. Or if any individual wishes to speak, they may do so at this meeting. Those who wish to speak may do so at this time.

Does any member of the public wish to speak?

(No audible response.)

CHAIR MUELLER: Let me announce that we plan to hold the next full Council meeting in the spring of 2009 with the exact date and location to be determined after the new Secretary of Energy is confirmed.

And with that, if there is no other business to come before the Council, we stand adjourned. Thank you.

I'm sorry. Sy?

QUESTIONER: Sy Ali. I want to submit a request to the executive committee regarding the communication committee which

was serving as an interface or a conduit between the Council and the public. I'd like to urge the executive committee to look into that and consider its continuation.

EXECUTIVE VICE-PRESIDENT BECK: Mike, you can answer that. But yes, I think we'd like to work with the leadership to maybe reconstitute the communications committee, and be happy to take that under consideration and work with the officers.

CHAIR MUELLER: Thank you, Sy.

Anything else?

(No audible response.)

CHAIR MUELLER: Okay. With that, we stand adjourned. Thank you.

(Whereupon, at 11:45 a.m., the hearing was adjourned.)

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This is to certify that the foregoing transcript in the matter of: Full Council Meeting

Before: National Coal Council

Date: November 14, 2008

Place: Washington, DC

represents the full and complete proceedings of the aforementioned matter, as reported and reduced to typewriting.

Eric Mollen

Eric Mollen