

**METHANE TO MARKETS PARTNERSHIP
COAL SUBCOMMITTEE MEETING**



Methane to Markets

10th Session of the Coal Subcommittee
12 October 2009
Palais des Nations
Geneva, Switzerland

FINAL MINUTES

Summary

The Coal Subcommittee held its tenth session on 12 October 2009 in Geneva, Switzerland. The meeting was held in preparation for the 2010 Methane to Markets Partnership Expo, which will take place in New Delhi, India, from 2 – 5 March 2010. Attendees discussed topic ideas for the technical and policy sessions planned specifically for the coal sector, and representatives from Partner countries as well as the private sector shared their plans for participation in the Expo. All electronic presentations are available on the Methane to Markets Web site, at:

http://www.methanetomarkets.org/m2m2009/news-events/event_detailsByEventId.aspx?eventId=10.

Opening Remarks and Introduction

The Coal Subcommittee meeting was the designated first half of the United Nations Economic Commission for Europe (UNECE) Fifth Session of the Ad Hoc Group of Experts (AHGE) on Coal Mine Methane meeting. The meeting was attended by Methane to Markets Partner country delegates, Project Network members, and Administrative Support Group (ASG) staff, as well as UNECE meeting participants, members, and personnel. A list of delegates and attendees is included as Annex 1 to these minutes. The meeting was opened at 10:15 a.m.

Presiding over the meeting were:

- Co-chair Dr. Pamela Franklin, Team Leader of the Coalbed Methane Outreach Program (CMOP) at the U.S. Environmental Protection Agency (U.S. EPA).
- Acting Vice chair Ms. Hu Yuhong, Deputy Director General of International Cooperation Center of SAWS, standing in for Mr. Huang Shengchu, President of the China Coal Information Institute (CCII).
- Co-chair Mr. Ashok Singh, Managing Director of the Central Mine Planning and Design Institute (CMPDI) in India.

Dr. Franklin opened the meeting by expressing her appreciation for everyone's attendance. In particular, she thanked the UNECE AHGE for allowing the Methane to Markets Coal Subcommittee to fill a large portion of its agenda.

Mr. Singh and Ms. Hu gave introductory remarks, and at Dr. Franklin's suggestion, introductions of country delegates, Project Network members, and other attendees followed. After introductions were made, Dr. Franklin summarized the Subcommittee meeting objectives. The meeting's primary goal was to

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engage Partner country delegates and private sector representatives in a productive discussion about the topics to be presented and project opportunities to be showcased at the 2010 Expo.

Dr. Franklin reviewed the agenda items, and no questions or comments were raised regarding the agenda. Attendees unanimously consented to officially adopt the agenda, which is included as Annex 2.

Update from the Administrative Support Group

Mr. Henry Ferland, Co-Director of the Methane to Markets ASG, followed with a Partnership update. As of October 2009, the Partnership comprises 902 Project Network members and 31 Partner countries, including the recent addition of the Dominican Republic.

In the past few years, the Partnership has been strongly focused on outreach efforts, and a significant amount of this outreach is done through the Methane to Markets Web site. To take full advantage of the Internet as an outreach tool, the Web site has been redesigned. Success stories, country-specific pages, news, tools, and other resources are now more easily accessible through the home page. In addition, the *Methane International* newsletter is now available in a new online format. Mr. Ferland reminded attendees that Partners and Project Network members have the opportunity to contribute to the newsletter by sharing any news of which they are aware.

Mr. Feland then provided an update on the progress of the Partnership Accomplishments Report. The ASG submitted a final draft of content and layout to the Steering Committee in Oct 2009 and the final printed report is expected to be complete in December 2009. The report will be distributed in Copenhagen at the United Nations Framework Convention on Climate Change (UNFCCC) 15th Conference of the Parties (COP15) meeting in December.

Mr. Ferland reviewed the Steering Committee meeting outcomes, which took place in September 2009. The Partnership's original Terms of Reference (TOR) were set to expire in November 2009, but have been extended. The Steering Committee discussed the future of the Partnership, including enhanced commitments to the Partnership and the potential expansion to new sources such as rice, enteric fermentation, and wastewater. Additionally, the Steering Committee agreed to support the Partnership in seeking UNFCCC observer status. The TOR will be revised to include country action plans as well as monitoring and reporting. The new TOR will be discussed at the next Steering Committee Meeting, at the 2010 Expo.

Overview of 2010 Partnership Expo Planning Progress

Mr. Ferland provided a summary of the plans made thus far for the 2010 Expo. It will take place at the Taj Palace Hotel, in New Delhi, India. There will be rooms for available for sector-specific technical sessions and rooms for private sector representatives to display booths. The four-day event will, tentatively, comprise the following components:

Tuesday, 2 March:	Sector-specific site tours Steering Committee meeting
Wednesday, 3 March:	Opening Plenary Session Steering Committee meeting (cont.) Sector-specific breakout sessions Grand opening reception in exhibits area
Thursday, 4 March:	Sector-specific breakout sessions (cont.)
Friday, 5 March	Closing Plenary Session Sector-specific Subcommittee meetings

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For the coal sector, no site tours have been planned at this point because there are no relevant coal mine methane (CMM)/coal bed methane (CBM) sites close to the Expo venue.

Mr. Ferland emphasized the critical role each Partner country will play in the success of the Expo. Partners have been asked to identify and assist in data collection for potential project opportunities that could be showcased at the event. Information collection templates in response to the Expo Call for Projects are due 15 November 2009. Additionally, each Subcommittee is responsible for developing sector-specific technical and policy agendas, which will involve serving as moderators or speakers as well as reviewing abstracts submitted in response to the Expo Call for Presentations. Abstracts are due 30 October 2009, and potential speakers should be notified of selection by 1 December 2009. Final electronic presentations will be due 15 January 2010.

Each Partner country is encouraged to market the Expo in their home country and to identify sponsors, technology vendors, and coal mine representatives to attend. He also encouraged Partners to put up country-specific booths at the event, which would involve coordinating representation from all applicable sectors in a given country. These country booths will be free for Partners. A 2-page flyer and 8-page brochure for the Expo will be available for marketing purposes.

After Mr. Ferland's presentation, the floor was opened for questions and comments.

Discussion

- Mr. Singh suggested the possibility of conducting a coal site visit at the end of the Expo, instead of on the first day. Because the nearest CBM site is more than 1,000 kilometers away from the Expo venue, a visit on the first day would not be practical; but perhaps by moving it to the end of the event, it would give attendees the opportunity to work the site visit into their return trips. Mr. Ferland agreed and said the ASG would consider this idea as they continue their planning.
- Clark Talkington, Senior Vice President of Sindicatum Carbon Capital, wondered—given that the Partnership is now seeking UNFCCC observer status—if Mr. Ferland saw Methane to Markets eventually playing a more active role. He was also curious whether or not the Partnership would be actively soliciting any grants in the near future.
 - Mr Ferland replied that since the Partnership is a voluntary program, Partner countries are not legally bound to do anything, and this is an obstacle even for pursuing observer status. In discussing the future of Methane to Markets in September, the Steering Committee felt strongly that the Partnership, in the future, should have a more active role in methane project development, and potentially be linked more directly into the UNFCCC process. However, he acknowledged the difficulty in knowing how exactly it would be linked because of the uncertainty of what would come out of the Copenhagen discussions in December. Mr. Ferland clarified that even though it was referred to as 'Methane to Markets grant solicitation,' it is actually a solicitation that is issued by the United States government (US EPA), which is one of the primary funders of Methane to Markets. He believes they will be doing another solicitation in the next year; he expects the solicitation to be announced and still be open when the Expo is happening, which would encourage maximum participation.
- Ms. Hu pointed out that although more than 700 people attended the 2007 Expo in Beijing, most of these attendees were from China. She stressed the importance of reaching out to

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individuals, organizations, and companies from as many countries as possible. Mr. Ferland agreed, stating that the ASG was open to any ideas on how to disseminate information and emphasizing that the Subcommittee is a critical component for getting the word out to the world about the 2010 Expo.

- Mr. Borys Griadushchyi, Director of Donetsk Research Institute of Coal (Ukraine), expressed his concern about the short timeframe between this meeting and the Expo. Mr. Ferland replied the ASG anticipated sending official invitations to the Partner countries soon, and that personal invitations would also be sent to all Subcommittee delegates and Project Network representatives.
- Mr. Niel Butler, of Harworth Energy, asked how country delegates and the private sector could support the Partnership in its efforts to represent them. Mr. Ferland said it was important to support country delegates who will attend COP15. The delegates and private sector experts can express their support for Methane to Markets at the meeting.

Coal Subcommittee Plans for Expo

After summarizing the last Coal Subcommittee meeting, with an emphasis on the Expo planning portion of the meeting, Dr. Franklin reviewed the Expo preparation activities of the Coal Subcommittee that have taken place since January 2009. These activities include:

- Project Opportunities
 - Collected information to update the status of project opportunities showcased at the 2007 Expo. Updated were obtained for 12 of the 20 projects.
 - Distributed Call for Projects for new project opportunities to showcase.
 - Initiatives taken by individual Partner countries.
- Coal-Specific Expo Sessions
 - Distributed Call for Presentations and have received six coal-specific abstracts to date.
 - Developed notional agenda for coal sector technical and policy sessions.
 - Nominated moderator/coordinator for each session.

Proposed Notional Agenda for Coal Sector

The proposed notional agenda is included as Annex 3. After providing a brief outline of coal-specific session topics, Dr. Franklin asked the coordinators to briefly summarize their respective session topics.

- ***Session I. Status and Trends in CMM Project Development***

Mr. Richard Mattus, of MEGTEC Systems, explained this session's objective would be to show the audience what has been done and what is currently being done in different regions of the world to abate CMM and ventilation air methane (VAM) emissions. Additionally, he would like to include examples of promising new developments. He noted this session would also focus on regional and project or stakeholder aspects rather than technology, in order to avoid overlapping with the session on technology development. He proposed having a panel of experts representing coal mines, consultants, Clean Development Mechanism (CDM) companies, and equipment vendors that could outline their experience in the development of CMM/VAM processing in various regions.

 - Dr. Bharath Belle, of Anglo American PLC, suggested looking at the history of CMM projects—not only success stories, but also failures and the lessons learned from them. He was also curious as to the use of methane from metal mines, such as the platinum and gold mines in South Africa.

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- ***Session II. Technology Development in the CMM Sector***

Mr. Trevor Stay, of Anglo Coal, accepted the role of coordinator and moderator of the session on technology development, but he was unable to attend the Geneva meeting. He will be coordinating with Mr. Mattus in order to eliminate any overlap of topics between the two sessions. Dr. Franklin reported that Mr. Stay was considering a number of ideas for the technology session, including, for example, end uses for captured methane. These uses include the production of liquefied natural gas (LNG), the use of methane as a feedstock for ethanol, and the use of a direct methane fuel cell.

- Mr. Singh noted the utilization of VAM as a topic that should be covered in this session.
- Mr. Griadushchyi suggested having an expert in this session who could discuss the development of an international methodology to calculate emissions as well as methane in place for a given coal mine. This could include a summary of the current state of the art for determining emission estimates and current techniques for calculating methane reserves.

- ***Session III. Policies and Regulation Impacting CMM Projects***

Ms. Ann Boon, of Australia's Department of Resources, Energy and Tourism, has agreed to work with her colleague, Mr. John Karas, to cover the wide-ranging theme of policies and regulation. She explained they would be looking into coordinating a variety of session topics within the broader subject of policy, such as how regulatory frameworks and voluntary markets affect CMM projects. They are open to suggestions and that they will be fleshing out these ideas shortly.

- Mr. Pravat Mandal, Advisor for India's Ministry of Coal, wondered how different countries handle who should have priority in a situation where an area can be mined for coal but also developed for methane extraction—i.e. would the CMM/CBM project developers have access to the gas before the coal mine owner or operator begins the mining process, or vice versa? Dr. Franklin commented that in the United States, it was typically "first in time, first in right," but that it may be useful to explore this topic in more detail as part of the policies session. Mr. Hilmar Von Schoenfeldt, of Petron Resources LP, added that in many cases gas can be extracted simultaneously with mining activities and that in those cases, there is no need to wait for one process or the other to be completed.

- ***Session IV. Best Practices Guidance for CMM Drainage and Utilization***

Mr. Ray Pilcher, President of Raven Ridge Resources and Chair of the AHGE, proposed the following topics for the session on best practices:

- *Overview of UNECE Best Practices Document.* This would include a description of intent, expected results, content, and suggested uses of the document.
- *Example(s) of drainage practices.* This could be a case study of drilling practices that shows potential use options available to obtain high quality gas production.
- *Example(s) of collection and transportation of CMM.* This could be a case study of best practices of collection and transportation, employed underground, that result in increased safety and increased gas production. He cited a presentation given by Green Gas International in Chengdu on collection systems design, installation, and monitoring as good example.
- *Different approaches to mine ventilation.* This could be a case study of a project incorporating VAM destruction and use. Cases studies can be drawn from Europe, Australia, and North America.

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- *Economic case studies.* These could include success stories that demonstrate the relationship between investment in emissions reduction, gas production, mine productivity, and improved safety.
- *Historical overview.* It would be useful to show how policy and regulation are primarily driven by best practices. Historically, examples of regulation resulting from coal mine incidents and fatalities can be found in the United States, United Kingdom, Australia, and other countries. Mr. Pilcher briefly provided specific examples for the United States.

Discussion

- Mr. Talkington wondered if, since all four session topics are interrelated, it would be helpful to have a fifth session that would serve as a kind of wrap-up session, bringing all four areas together and perhaps driving a future action plan for the Partners in the coal sector. Dr. Franklin replied that was an excellent suggestion.
- Dr. Franklin reminded attendees about the Call for Presentations that went out in May, noting that very few coal-specific abstracts had been submitted to date. A summary of those that have been submitted is included as Annex 4. Session coordinators are reviewing what abstracts have come in to see where each proposed abstract might fit, but given the limited amount of time available before the Expo, coordinators have the option of directly soliciting input rather than waiting for abstracts to come in. This will help ensure the sessions are as comprehensive and informative as possible.
- Since the Expo will be held in India, Dr. Franklin encouraged everyone to keep the Indian delegates Mr. Mandal and Mr. Singh informed of progress made in filling the notional agenda for the individual sessions. She stressed the aggressive timeline of the schedule, as speakers are to be notified by 1 December 2009.

Overarching Topics for Expo

In addition to the coal-specific sessions, Mr. Ferland indicated that two plenary sessions are also planned for the Expo.

1. The first will include a welcome from high-level delegations from India and the United States, as well as remarks from high-level delegations from other countries that will stress the importance of climate change and help put the Expo into perspective.
2. The other plenary session will allow all sectors to come together and discuss certain issues with respect to methane emission reduction that apply to all sectors. Some of these topics include financing, CDM, interconnection, gas treatment, and pipeline injection.

Mr. Karl Schultz of Green Gas International suggested safety and energy markets as potential topics. Also relevant would be policies that are incentives or disincentives for any methane abatement project.

Partner Country and Project Network Participation Plans

Following the discussion on Expo session topics, country delegations were asked to provide the Subcommittee with updates on their plans for 2010 Expo participation.

India

Mr. Singh presented a brief summary of the current state of coal production in India to emphasize the importance of coal as an energy resource in this country, described the accomplishments of the CMM/CBM Clearinghouse that was established in 2008, and provided an update for the CMM/CBM

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recovery demonstration project currently operating at Moonidih and Sudamdih mines. Additionally, he explained that VAM development is currently a priority in India and that the Coal Mine Planning and Design Institute (CMPDI) has recently generated VAM-specific data for several mines. Discussions have begun with suitable technology providers, and a proposal outlining the technology for a project along with financial terms is expected soon.

In light of the project opportunities for the upcoming Expo, Mr. Singh also reported progress on two Indian project opportunities that were showcased at the 2007 Expo: slimhole drilling has begun to collect CBM data for Korba Coalfield and Singrauli Coalfield, and data generation is expected to be complete by November 2009. The corresponding assessment report should be complete by May 2009.

Lastly, Mr. Singh indicated that Coal India Limited has sponsored a Platinum Pavilion at the upcoming Expo and that previously described accomplishments and opportunities would be showcased for India. He finished by welcoming delegates and private network representatives to New Delhi next year and remarked that March will be a very good season for India.

China

Ms. Hu began by saying that China would be happy to share its experience with hosting the previous Methane to Markets Expo in order to assist in the upcoming Expo. She provided a brief summary of coal production statistics in China, noting that because the country is such a big coal producer, there are many opportunities for CMM project development. The Chinese government has developed policies to encourage coal mine safety as well as gas collection and utilization. With respect to the upcoming Expo, the National Development and Reform Commission (NDRC) would like to organize coal mine companies, project developers, and financial companies to attend. They would also like to involve some of the companies in the project opportunities to be displayed at the Expo, as many of them are still seeking investors to assist with financing the projects in order to move forward.

Ms. Hu provided an example that could be included in the session on policies and regulation impacting CMM project development; the Chinese government has issued a policy requiring CMM utilization if the methane concentration is 30 percent or more. This disqualifies such utilization projects from obtaining CDM carbon credits because the projects are not “additional.” She felt it might be useful at the Expo to discuss how to deal with these kinds of policies in the context of CMM project development. She also remarked that the topic of safety should be included in the sessions.

Australia

Ms. Boon reported that Australia has established a working group that is a collaboration of the Department of Resources and Tourism, the Department of Agriculture, Fisheries and Forestry, the Department of Foreign Affairs and Trade, and many other governmental departments. They have received very positive feedback from industry. She also stated that Australia will run a country booth at the Expo.

Germany

Mr. Ralph Schlüter, of DMT GmbH & Co. KG, said his company would be willing to take part in one or two presentations at the upcoming Expo, but that they would probably not secure a booth. He remarked that Germany did have CMM and CBM projects in place, but there was not much room for improvement. Mr. Schlüter did not know whether or not there would be interest in having a country booth, since the government had just held elections.

Poland

Mr. Jacek Skiba of the Central Mining Institute of Katowice explained that, with respect to CMM project development, not much had changed in Poland since the last Subcommittee meeting. He reviewed the current status of CMM development in Poland, reporting that there were 31 operating coal mines, 21 of

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which were draining methane and 14 of which utilize the drained methane. He described two research projects funded by the U.S. EPA: an abandoned mine feasibility study and CMM-to-LNG assessment at Zory Coal Mine, and ongoing VAM research at 10 gassy coal mines in Poland.

Mr. Skiba then reported that new legislation, including two items directly related to CMM development, have been introduced since January's meeting. One activity will support the economic utilization of methane released during mining operations in coal mines by establishing connections to utilize electrical energy produced by CMM and performing analyses on the amount of energy that could be produced by CMM recovered from mines. The second activity is the introduction of technological solutions enabling the utilization of VAM released from coal mines into the atmosphere.

With regard to the Expo, Mr. Skiba said that his colleague, Mr. Rafal Wojciechowski, would speak with the Ministry of Economy about sending a delegation to New Delhi. They were also planning to send four letters to the largest coal companies in Poland to inform them about the Expo and encourage them to attend. Additionally, Mr. Zdzislaw Matysiak's company, Spolka Energetyczna Jastrzebie SA, is interested in presenting its achievements in New Delhi in order to share its experience and CMM utilization know-how.

Ukraine

Mr. Georgii Rudko, head of the State Commission of Ukraine on Mineral Resources, reported that in May of this year, Ukraine adopted a new law on CMM; however, he could not provide many details about it at this time, since the Minister was not in attendance to present more information. Mr. Rudko could say, though, that Ukraine has a center on CMM that has considerable funding for the implementation of projects concerning CMM. Additionally, the Commission has developed a methodology for geological and economic assessments for methane resources, and Mr. Rudko offered their assistance in carrying out such assessments for any interested companies in connection with the reports to be generated for the Expo.

United Kingdom

Mr. Butler stated that in the last couple of years, there has been a slow increase in the amount of CMM being utilized in the United Kingdom (UK). Almost all the CMM emitted from the country's mines is utilized; however, there are seven enclosed flare stacks that were shut down when the UK emissions trading scheme closed. He also mentioned that there is currently no commercial support for the development of VAM projects.

Mr. Butler pointed out that the European Union Emissions Trading Scheme (EUETS) that replaced the UK trading scheme currently creates a disincentive for CMM power generation projects, because projects producing over a certain number of megawatts must pay for carbon credits, effectively penalizing these greenhouse gas reduction projects. He cited one example where a project had to reduce their system from four to two engine-generator sets in order to avoid having to pay for carbon credits. He concluded by encouraging Methane to Markets to work on getting the British government more involved and to make appropriate groups aware of these disincentives.

United States

Dr. Jayne Somers, U.S. EPA CMOP Program Manager, began by reviewing the U.S. strategy for CMM project development. The domestic CMM strategy is focused on overcoming regulatory and institutional barriers to project development, through technical information exchange. The nodal U.S. agency is the U.S. EPA, and CMOP leads the Methane to Markets coal sector work. U.S. EPA also collaborates with its sister organization, the U.S. Department of Energy, in its domestic work. Recent activities conducted as part of an international strategy for CMM project promotion include:

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- EPA grant solicitation
 - 2007: six grants awarded for projects in China, India, Mexico, and Nigeria
 - 2008: six grants awarded for projects in China, India, Mongolia, and Poland
 - 2009: new grants to award
- Participation in Asia-Pacific Partnership on Clean Development and Climate – Coal Mine Task Force

Country-specific objectives and activities included in the U.S. international strategy were explained in detail. U.S. goals for CMM development in other countries range from local project support, including feasibility studies and resource assessment, to capacity-building and assistance with legal and regulatory issues. In-depth details regarding specific U.S. activities in China, India, Mexico, Mongolia, Nigeria, Poland, Russia, and Ukraine can be found in Dr. Somers's presentation on the Methane to Markets Web site.

With respect to the upcoming Expo, Dr. Somers reported that U.S. EPA is evaluating the status of the projects that were showcased at the 2007 Expo and plans to develop profiles for one or two of the projects that have progressed successfully. A list of these projects and corresponding updates obtained are included here as Annex 5. U.S. EPA is currently working to identify new opportunities for posters and flyers and is willing to provide one or more presentations for the 2010 Expo. Additionally, U.S. EPA is willing to consider travel support for key personnel for the event. Lastly, she provided an estimate of the minimum number of project opportunity templates anticipated for nine countries: China (10), India (5), Ukraine (4), Poland (2), Georgia (1), Kazakhstan (1), Mexico (1), Mongolia (1), and Russia (1).

Russian Federation

Sergey Shumkov stated that the issues involved with CMM are complex and that it would be difficult for him to give an overall assessment of CMM in Russia because he has not been working in the Ministry for very long. He observed that issues can universally be divided into two areas, the first being legislative framework and economic incentives and the second being the technical side of CMM development. He provided some examples, but said he would be able to present a full picture of the situation in Russia by the next Subcommittee meeting.

Mr. Shumkov said that the Ministry would pass information about the upcoming Expo on to the private coal mining companies in Russia and that they expect the companies will be interested in learning about CMM technologies.

European Commission

Ms. Marion Wilde, Directorate General for Energy and Transport for the European Commission, said she would encourage her colleagues to attend the Expo and that their primary focus would be to share CMM information learned from developed countries, such as Poland and Germany, with developing countries.

Input from the Private Sector

Mr. Mattus announced that MEGTEC Systems would be present at the 2010 Expo, and they are also planning to become an Expo sponsor. Dr. Belle added that Anglo Coal would also be participating in the Expo, and he re-emphasized the need for the Coal Subcommittee to reach out to the coal sector by sending letters to encourage them to attend the event as well.

Concluding Remarks and Adjournment

Dr. Franklin summarized the general order of events to take place at the 2010 Expo, explaining that the Coal Subcommittee meeting would be very condensed—likely only a half-day. With respect to project opportunities for display, Dr. Franklin stressed that the information itself is still needed in order to move

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forward. She clarified that Methane to Markets could facilitate the actual formatting of the posters or flyers if project developers only have resources to provide the required information.

With regard to the Expo coal sector technical and policy sessions, conceptual ideas have been proposed for and need to be fleshed out. She thanked all attendees for their input, reminding them that a firmer agenda should be in place by 1 December. Moreover, she recommended a teleconference meeting of the four session coordinators to make sure no topics were duplicated among sessions.

Lastly, Dr. Franklin announced that registration for the Expo would be available in the following week, and she strongly encouraged attendees to take this information home with them to share with colleagues and promote attendance.

After brief closing remarks from Ms. Hu and Mr. Singh, the meeting was adjourned.



Methane to Markets

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**METHANE TO MARKETS PARTNERSHIP COAL SUBCOMMITTEE MEETING
12 October 2009
Collocated with meeting of UNECE
Ad Hoc Group of Experts on Coal Mine Methane
Palais des Nations, Geneva, Switzerland**

AGENDA

Note: All participants MUST pre-register through the UNECE to obtain security clearance. The meeting of UNECE Ad Hoc Group of Experts will convene at 10:00 AM on 12 October 2009 and is expected to adjourn at 6:00 PM on 13 October 2009. The Subcommittee agenda will comprise nearly all of the first day of the 2-day meeting of the Ad Hoc Group of Experts. Subcommittee members are welcome and encouraged to attend all sessions of the UNECE meeting. Registration for participants will take place from 8:00 AM to 10:00 AM on 12 October 2009.

Coal Subcommittee Meeting

- | | |
|---------------|---|
| 10:40 – 10:50 | <p>Welcome Addresses</p> <ul style="list-style-type: none"> • Co-Chair Pamela Franklin (USA), Co-Chair A.K. Singh (India), Vice-Chair Hu Yuhong (China) • Brief introduction of all meeting participants |
| 10:50 – 11:00 | <p>Adoption of Agenda
<i>Subcommittee Chairs</i></p> <ul style="list-style-type: none"> • Confirm the overall meeting objectives and specific mandates to the Coal Technical Subcommittee as discussed in Monterrey, Mexico. |
| 11:00 – 11:30 | <p>Update from the Administrative Support Group (ASG)
<i>Henry Ferland, ASG</i></p> <ul style="list-style-type: none"> • Summary of key points from September Steering Committee Meeting • Status of Methane to Markets Partnership-wide accomplishments report • Status of planning and role of Subcommittee Members in planning for the 2010 Expo |
| 11:30 – 11:45 | <p>COFFEE BREAK</p> |
| 11:45 – 12:15 | <p>2010 Partnership Expo: Showcasing Project Opportunities
<i>Pamela Franklin, Co-Chair</i></p> <ul style="list-style-type: none"> • Summary of plans for exhibiting coal mine methane project opportunities at 2010 Expo • Summary of projects displayed at 2007 Expo • Review of available tools for collecting, analyzing, presenting information (information collection templates, flyer and poster templates) |

Annex 2 – Meeting Agenda

- 12:15 – 1:00 **2010 Partnership Expo: Agenda for Technical and Policy Sessions**
Ray Pilcher, Raven Ridge Resources; Ann Boon, Australia; Richard Mattus, MEGTEC
- Proposed topics for technical and policy sessions
 - Discussion of response to call for presentations (to date)
- 1:00 – 3:00 **LUNCH BREAK**
- 3:00 – 3:15 **2010 Partnership Expo: Agenda for Technical and Policy Sessions Continued**
- 3:15 – 4:30 **2010 Partnership Expo: Country-Specific Participation**
- Updates from country delegates on *actionable items* for the March 2010 Expo. Each Partner Country should be prepared to discuss (5 to 10 minutes per country):
- Potential project opportunities (in country or in other countries) to be showcased at 2010 Expo
 - Updates on progress of previously showcased project opportunities
 - Target companies and organizations to encourage Expo participation.
 - Target technologies and methane emissions reduction projects to be showcased at the Expo.
- Partner countries expected to participate if present:*
- | | |
|--------------|------------------|
| ▪ Australia | ▪ Poland |
| ▪ China | ▪ Russia |
| ▪ Germany | ▪ Ukraine |
| ▪ India | ▪ United Kingdom |
| ▪ Kazakhstan | ▪ United States |
| ▪ Mongolia | |
- 4:30 – 4:45 **COFFEE BREAK**
- 4:45 – 5:15 **India Partnership Expo: Country-Specific Participation Continued**
- 5:15 – 5:45 **Updates from Project Network**
- Plans for participation in 2010 Expo (attendance, sponsor, exhibitor, etc.)
- 5:45 – 6:00 **Summary of Action Items Discussed at this Meeting**
- Meeting action items
 - Specific tasks that meeting participants agree to accomplish and report on within specified timeframes
- 6:00 **ADJOURN**
- 6:00 – 7:30 **RECEPTION**
To be held in the Salon de Lausanne of the DSR Restaurant, on the 8th floor of the Palais des Nations.



Methane to Markets

2010 METHANE TO MARKETS PARTNERSHIP EXPO

New Delhi, India

2 – 5 March 2010

PROPOSED NOTIONAL AGENDA FOR COAL SECTOR:

Technical and Policy Sessions

I. Status and trends in Coal Mine Methane Project Development

Coordinator / Moderator: Richard Mattus, Megtec Systems

- Innovative projects that are planned, being constructed, or completed (on-the-ground)
- Seek diversity in project type, location
- Would be very interesting / appropriate to include one or more presentations on VAM projects underway
- Could possibly include an overview presentation, with most papers focused on specific project case studies / examples

II. Technology Development in the Coal Mine Methane Sector

Coordinator / Moderator: Trevor Stay, Anglo Coal

- Focus on cutting-edge, innovative technologies (preferably field-tested, but could include some at bench test stage as well) that are intended for / suited for coal mine methane sector
- Could include exciting developments in VAM, LNG, other technologies
- Seek diversity in types, geography

III. Policies and Regulation Impacting Coal Mine Methane Projects

Coordinator / Moderator: John Karas / Ann Boon, Australian Government

- How global climate change policy affects CMM projects in particular
- E.g., any relevant changes to Kyoto / CDM framework, Executive Board approval process, ACM008 methodology
- Update / overview of voluntary market for CMM projects carbon credits – is this more / less relevant post-Copenhagen? What are prospects in US, China?
- Update on US policy (e.g., offset market, greenhouse cap and trade program) – if there are any developments to report
- Update on Australia policy as it pertains to / encourages CMM projects

IV. Best Practices guidance for CMM Drainage and Utilization

Coordinator / Moderator: Ray Pilcher, Raven Ridge Resources

- Mini-workshop to launch the “Best Practices” guide developed by technical experts with the support of the Methane to Markets Partnership, the UNECE, and the World Coal Institute
- Possibly facilitated panel discussion including members of technical expert group, presenting overview / summary of key principles / recommendations followed by discussion / Q&A

Annex 4 – 2007 Expo Project Opportunity Updates

Project Name	Country	Current Project Information Available	Progress Update (As of December 2008)	Progress Update (September 2009)	Mine-specific or project-specific Contact Name	Mine-specific or project-specific Contact Email
Hebi CMM Power Generation (Hebi, Henan, China): No. 6 Coal Mine	China	Planned to implement 7 surface wells in No. 6 coal mine for pre-mining extraction. Will construct a 2.5 MW CMM power plant that will utilize the extracted CMM. More power plants will be installed at a later date. Demonstration phase of project will install 10, 500-kW generators powered by CMM. Eventually, a total of 22, 500-kW generators will be installed once suitable funding is acquired by the Hebi Coal Industry Company.	The project implementing 7 surface wells in No. 6 coal mine for pre-mining extraction has been suspended. Through December 2008, 14 sets of generating unit with 500 kW capacity have been installed in Hebi Coal Industry Company. US EPA is funding a feasibility study conducted by Advanced Resources International at Hebi mining group (to be completed 2009).	There are 5 CMM power plants which are respectively constructed in No.3, No.4, NO.6, NO.8 and NO.10 coal mine with the 14 set of generating units installed. It is planned to construct another 2 CMM power plants in the new ventilation shafts in NO.4 and NO.8 coal mine.	Liu Wenge Jon Kelafant (feasibility study)	liuwenge@coalinfo.net.cn JKelafant@adv-res.com
Hongneng Coal Mine CMM Recover and Utilization Project (Chongqing, China)	China	This project will generate electricity from CMM by installing 4 x 500 kW (2 MW total) internal combustion (IC) engines at the Hongneng coal mine and 2 x 500kW (1 MW total) IC engines at the Shuijiang coal mine.	Not available	Status Uncertain	Liu Wenge	liuwenge@coalinfo.net.cn
Jixi CMM Power Generation Project (Jixi, Heilongjiang, China)	China	Plans to enhance the drainage and recovery of fuel-grade methane from multiple coal seams at 600 to 1,000 meters below the surface. Will also install 13 MW (26x500 kW) Shengdong internal combustion engines fueled by CMM from the Jixi coal mine.	The feasibility report has been approved. 30 sets of generating unit with 500 kW capacity have been installed. From 2009 to 2010, the number of generating units will reach 113 in Jixi Coal Mining Group.	13 power generation station will be constructed between 2009 to 2010 with the installed capacity of 75,700 KW. The annual electricity output will reached 288 million kwh.	Liu Wenge	liuwenge@coalinfo.net.cn
Longfeng Coal Mine and Honglin Coal Mine Gas Power Generation Project (Guiyang, Guizhou, China)	China	Planned project consists of installing 20 x 500 kW gensets (10 MW total) by 2010, at the Longfeng and Honglin coal mines.	Not available	Status Uncertain	Liu Wenge	liuwenge@coalinfo.net.cn
Pingdingshan No. 4 VAM to Energy Project (Pingdingshan, Henan, China)	China	Plans to install an advanced, 6-MW ventilation air methane (VAM) oxidizer and electricity generation equipment at the No. 4 coal mine in Pingdingshan. The estimated investment to construct this project is \$20 million USD.	Pingdingshan Coal Co. Ltd. is communicating with a relevant company and plans to construct the project in 2009.	The project has been approved by Pingdingshan Coal Co. Ltd. Specific implementation has been arranged.	Liu Wenge	liuwenge@coalinfo.net.cn
Pingdingshan No. 8 CMM Drainage and Utilization Project (Pingdingshan, Henan, China)	China	Plans to extract, recover, and use CMM by employing the latest gob borehole technology at the Pingdingshan No. 8 mine. Eventually, the company will install 7 MW of power generation equipment.	A trial power plant has been constructed. 4 sets of generating unit with 500 Kw capacity were installed.	The trial power plant operates normally. Suitable investors are being sought	Liu Wenge	liuwenge@coalinfo.net.cn
Shigang Coal Mine CMM Purification/Liquefaction and Utilization Project (Yangquan, Shanxi, China)	China	Plans to expand the company's operation selling CMM as town gas. The company generates ultra pure natural gas products using low temperature separation technology and pumps the cleaned CMM gas into pipelines for residential use. Yangquan mines were supplying 105,000 households in Yangquan City with gas.	The feasibility report has been approved. The project is under construction and will be put into operation in 2009.	An experimental device has been put into operation. It's planned to construct a LNG plant with production capacity of 2000t. The feasibility report and preliminary design has been finished. Engineering construction is in progress.	Liu Wenge	liuwenge@coalinfo.net.cn
Shigang Coal Mine VAM Utilization Project (Yangquan, Shanxi, China)	China	Will install advanced ventilation air methane (VAM) oxidizer technology to utilize CMM for power generation. Once the project is fully operational, the installed oxidizer and accompanying power generation equipment will generate up to 6 MW of electricity.	A suitable investor is being sought.	The VAM utilization project in Shigang coal mine has been suspended. It is planned to develop another VAM utilization project in No.2 mine of Yangquan Mining Group. The letter of intent has been signed between the Group and the investor. Detailed information such as installed capacity is under consideration.	Liu Wenge	liuwenge@coalinfo.net.cn
Shihao Coal Mine VAM Recovery and Utilization Project (Chongqing, China)	China	Plans to initiate a project to recover and use ventilation air methane (VAM) to generate 6 MW of electricity and reduce greenhouse gas emissions.	Some companies and institutions have conducted site investigation but no cooperation agreements have been reached.	Preliminary intention of cooperation has been reached between AES and Songzao C&E CO.LTD. Further negotiation is in process.	Liu Wenge	liuwenge@coalinfo.net.cn
Songzao CMM Purification and Utilization Project (Chongqing, China)	China	The planned project will use advanced CMM purification technologies to remove the sulfur and oxygen from the drained CMM gas and increase the methane concentration from 40–50% to as high as 90%. The purified gas would be delivered by tanker trucks to the Chongqing Municipality for various end uses.	Raven Ridge Resources, Incorporated is preparing a feasibility report of the project. The feasibility report will be finished during 2009.	Agreement between China Gas and Songzao C&E CO.LTD has been reached to co-invest the project. The project has entered the stage of implementation.	Ray Pilcher	pilcher@ravenridge.com
Korba Coalfield CMM Project Opportunity (Chattisgarh Region, India)	India	Methane is to be pre-drained before advancement of faces. Expected to begin project operation in 2014 after a 2-year development period. Before 2014, the following will take place: - Slimhole drilling for gas assessment, permeability test, and other analyses. - Drilling of exploratory well to determine economic and technical viability of project. - Producing bankable project report.	Not available	Slimhole drilling for generation of CBM related data likely to commence in November 2009, which is likely to be completed by February 2010. Report based on data generated to be prepared by May 2010	CBM Cell Group, at Central Mine Planning & Design Institute Limited	cmd@cmpdi.co.in or cmpdi2@hub.nic.in

Annex 4 – 2007 Expo Project Opportunity Updates

Project Name	Country	Current Project Information Available	Progress Update (As of December 2008)	Progress Update (September 2009)	Mine-specific or project-specific Contact Name	Mine-specific or project- specific Contact Email
Singrauli Coalfield CMM Project Opportunity (Varanasi, Uttar Region, India)	India	Methane is to be pre-drained before advancement of faces. Expected to begin project operation in 2014 after a 2-year development period. Before 2014, the following will take place: - Slimhole drilling for gas assessment, permeability test, and other analyses. - Drilling of exploratory well to determine economic and technical viability of project. - Producing bankable project report.	Not available	Slimhole drilling for generation of CBM related data commenced, which is likely to be completed by November 2009. Report based on data generated to be prepared by March 2010.	CBM Cell Group, at Central Mine Planning & Design Institute Limited	cmd@cmpdi.co.in or cmpdi2@hub.nic.in
Mimosa Mines Methane Project (Palau City, Coahuila, Mexico)	Mexico	Three mines plan to capture CMM for both flaring and power generation, depending on the methane gas yields from the mines. Project is expected to generate approximately 7 MW of electricity.	Not available	Status Uncertain	Lorenzo Gonzalez Merla	lgonzalez@gan.com.mx
Ogboyoga Mine Power Generation Project Opportunity (Anambra Coal Basin, Nigeria)	Nigeria	A pre-feasibility study and economic analysis are planned for CMM capture and use systems at Ogboyoga Mine. Eventually, CMM-fired electricity generators would be installed to supply electricity to nearby towns.	Not available	Status Uncertain	Solomon O. Adesanya	muyiwaad@yahoo.com
Okpara Mine Power Generation Project Opportunity (Enugu State, Nigeria)	Nigeria	Plans for a pre-feasibility study and economic analysis for CMM capture and use systems at Okpara Mine. A CMM-powered turbine is to eventually be installed, to generate up to 1.24 MW of electricity.	Pre-feasibility study is being conducted (with funding from US EPA), expected to be completed in 2009.	The pre-feasibility study funded by EPA was to screen Okwupa, Onyeama and Okpara coal mines. Unfortunately, at the start of the project we could not include Okpara because of safety issues at the mine. However, we screened Okwupa and Onyeama coal mines and conducted pre-feasibility study on Okwupa coal mine. The final report is being reviewed by EPA and it should be out before the next Expo in India	Dr. Bunmi Ogunsola	president@temec5.com
Gob Methane Recovery and Utilization at Capitalynaya and Osinnikovskaya Mines (Osynniky, Kemerovo Region, Russia)	Russia	Plans to recover and utilize CMM for heat by burning it with coal in a converted mine boiler-house. If the initial stage is successful, further plans will be made for other possible utilization methods.	Not available	Status Uncertain	Karasevich Aleksandr Miroslavovich	promgaz@promgaz.ru
CMM Capture and Use at Holodnaya Balka Mine (Donetsk, Ukraine)	Ukraine	Plans to include horizontal drilling of cross-measure boreholes, re-engineering ventilation shafts, and rehabilitating gas drainage systems and pipelines. Once additional methane is recovered from the mine, the mine owners would install a CMM-fired electricity generator.	US TDA funded feasibility study completed.	Status Uncertain	Jon Kelafant	JKelafant@adv-res.com 703-528-8420
Degasification Modernization and Expansion at Bazhanov Mine (Makeyevka, Donetsk, Ukraine)	Ukraine	Plans to upgrade the commercial CMM recovery and utilization systems at the mine and eventually install a CMM-fired co-generation plant (up to 5 MW). Additional end uses for the recovered CMM include transportation fuel and residential heating and cooking.	US TDA funded feasibility study completed.	Status Uncertain	Jon Kelafant Andrey Oleksyuk	JKelafant@adv-res.com 703 528 8420 bazhanova@tr.dn.ua
Power Generation Using CMM at Kalinina Mine (Donetsk, Ukraine)	Ukraine	Plans to install two 1-megawatt electricity generators at the Kalinina Mine.	Not available	"Presently on Kalinina Mine amount of methane went down because of coal output decreasing. According to statement of Mine Direction, there some potential possibilities to increase of methane debit are existing. In my opinion, capitation of mine methane on this mine demand of radical technical changes, otherwise - growth of accident rate and danger of explosions becomes very possible."	Borys Gryadushchyy	donugi@mail.ru
Degasification System Modernization at Kirovskaya Mine (Makeyevka District, Donetsk, Ukraine)	Ukraine	Plans to improve Kirovskaya mine's existing degasification systems to enhance productivity of the mine and capture additional CMM. The CMM could then be used for town gas (heat or fuel) or for power generation.	Not available	Status Uncertain	Not available	Not available

Annex 5 – Abstract Submissions for 2010 Expo Coal Sector Sessions

(As of 29 September)

Date Submitted	Topic of Interest*	Title	Lead Author	Company	Address	Country	E-mail
16-Jul	C2	VAM Cubes by MEGTEC for CER's and for ENERGY	Richard Mattus	Megtec Systems	Theres Svenssons gata 10 Gothenburg SE-417 55	Sweden	RMattus@MEGTEC.SE
3-Aug	C4	Current Status and Development of Methane Emission Reduction in China	Guoquan Zhao	China Coal Information Institute			cbmc@public.bta.net.cn
3-Aug	C4	Status Quo and Potential of Methane Emission Reduction of CMM in China	Guoquan Zhao	China Coal Information Institute			cbmc@public.bta.net.cn
15-Aug	C5	Overall benefits of the regulatory framework that allows the recovery and use of coalbed methane in Mexico	David Madero Suarez	Ministry of Energy	Insurgentes Sur 890, Del Valle Mexico City Z. C. 03100	Mexico	dmadero@energia.gob.mx; aolivares@energia.gob.mx
15-Aug	C4	Use of Coal Bed Methane (CBM) / Coal Mine Methane (CMM) for Decentralized Power Generation	Shraddha Kulkarni	Clarke Energy India			shraddha.kulkarni@clarke-energy-india.com
14-Aug	C4		Pramrod Kumar Gupta	Reliance Industries Limited	Shadhol Madhya Pradesh	India	pramod_k_gupta@ril.com
15-Aug	C4/C5	Mexico is reducing barriers and developing new projects to recover and use coal mine methane	Mario Santillan	Minerales Monclova, S.A. de C.V.	Apdo. Postal No. 47 Palaú, Coahuila C.P. 26350	Mexico	olga.briseno@semarnat.gob.mx
15-Aug	C1	A Cradle-to-Grave Approach to Utilizing Coalmine Methane for Electricity	Olayinka Ogunsola	U.S. Department of Energy	1000 Independence Avenue SW Washington DC 20585	USA	olayinka.ogunsola@hq.doe.gov

***Topics of Interest based on January 2009 Coal Subcommittee Meeting:**

- C1 Guidance for CMM degasification and use
- C2 Ventilation Air Methane (VAM)
- C3 CMM-related research activities
- C4 Country-specific status updates
- C5 Policy/regulatory issues and overcoming barriers