

METHANE TO MARKETS PARTNERSHIP COAL SUBCOMMITTEE MEETING



Methane to Markets

6th Session of the Coal Committee
United Nations, Geneva Switzerland
3 - 4 April 2007

FINAL NOTES

Summary

The sixth session of the Coal Subcommittee was held on 3-4 April 2007 in Geneva, Switzerland. The meeting focused on Partner countries' planned participation for the upcoming 2007 Partnership Expo in Beijing, China, as well as any questions or concerns that Project Network Members had regarding the Expo.

Opening Remarks and Introductions

The 6th Session of the Coal Subcommittee was the designated second half of the United Nations Economic Commission for Europe (UNECE), Third Session of the Ad Hoc Group of Experts on Coal Mine Methane meeting. Co-Chairs Mr. Paul Gunning, Branch Chief for the Non-CO2 Programs at U.S. Environmental Protection Agency (U.S. EPA) and Dr. Subrata Chaudhuri of India, as well as Acting Vice Chair Mr. Qinggang Sun of China (on behalf of Mr. Huang Shengchu), opened the meeting at 3:00 p.m. on 3 April 2007. 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.

Mr. Gunning explained that Dr. Pamela Franklin was unable to attend the meeting but she sent her regards. He also expressed he was looking forward to a day and a half of productive work that Dr. Franklin outlined in the final agenda. Mr. Gunning gave special thanks to:

- Mr. Clark Talkington with the UNECE for its support and providing the United Nations meeting venue.
- Japan for their support and direct sponsorship of several subcommittee members so they might attend the meeting.
- Ms. Erin Birgfeld and the Methane to Markets Administrative Support Group (ASG) for meeting preparation/support.
- Evening reception sponsors: Ruby Canyon, MGM, Raven Ridge and Energy EDGE.

Dr. Chaudhuri and Mr. Sun also made brief comments and welcomed participants. Dr. Chaudhuri expressed this subcommittee meeting was particularly important for discussing matters relating to the Expo. He outlined the main meeting topics:

- Updates from the ASG, country delegates, and Project Network members on their Expo preparations.

- Review the two types of project opportunity templates created for the Expo
- Discuss how many templates will be presented in Beijing as well as any speakers that meeting participants would like at the Expo.
- Review general subcommittee business, such as action plan status.

Following introductions, the meeting agenda was officially adopted with no questions or comments.

Report from Administrative Support Group (ASG) (See Annex 4)

Ms. Erin Birgfeld, ASG Director, began by announcing two new countries—Poland and Vietnam—recently joined the Methane to Markets Partnership, bringing the total number of Partner countries to twenty. The majority of her presentation centered on three key topics: results of the recent Steering Committee Meeting, the current status of Expo guidance from the Steering Committee, and the most recent “3-year charge” to the four subcommittees that make up the Methane to Markets Partnership.

During its December 2006 meeting, Ms. Birgfeld announced that the Steering Committee:

- Nominated the United States to continue hosting ASG functions and serving as Steering Committee chair for two more years (the United States accepted the nomination).
- Agreed to develop a Partnership-wide accomplishments report in mid-2008 that will include results from the Expo.
- Made several announcements/decisions regarding the Partnership Expo:
 - China’s National Development and Reform Commission of China (NDRC) will serve as an official Expo host, along with U.S. EPA.
 - Event duration reduced from 4 to 3 days.
 - Expo will not be a ministerial-level event.

Ms. Birgfeld continued by stating the following Expo specifics:

- Each Partner country will be provided a free booth to highlight activities under the Partnership and to feature various project opportunities.
- Paying sponsors will be provided booth space to display information relating to their organization, company, or technology.
- Free space will also be provided to display specific project opportunities within each sector.

Ms. Birgfeld stressed that Partners and/or Project Network members should submit information about their projects to the ASG and let the ASG know if they would like this project to be featured in the Expo. The deadline for project opportunity template submission is **2 July 2007**.

Mr. Birgfeld also described the current status of the Methane to Markets online tracking system. The ASG felt the existing tracking system was too complex, and would subsequently be revised and simplified. Nevertheless, Project Network members should actively gather information and use the online tracking system as an efficient means to track projects. The online tracking system will provide project opportunity information for two key Coal Subcommittee reports: (1) to the Methane to Markets Steering Committee meeting in Beijing; and (2) the 2008 Methane to Markets progress report.

Mr. Tomas Schneider with the European Commission asked what actions NDRC is undertaking as host. Ms. Birgfeld replied she recently traveled to China and while there, attended meetings with the NDRC climate section with Mr. Gao Long Shun. They also met with representatives of the Ministry of Construction (Expo lead on landfill sector), Ministry of Agriculture (Expo lead on agriculture sector), State Administration for Work Safety (Expo lead on coal mines sector along with the China Coal Information Institute [CCII]), and Chinese oil and gas companies that will be involved in the Expo, often called the “three giants:” Sinopec, CNOC (China’s state oil company), and CNPC (China National Petroleum Corporation). These organizations have been tasked by Mr. Goa to:

- Identify Expo participants.
- Identify projects to showcase at the Expo.
- Develop Expo agendas for the subcommittee tracks.

She stated that Mr. Sun would to provide extra information in his presentation.

Mr. Ray Pilcher with Raven Ridge Resources asked about different levels of sponsorship as well as the cost for a booth. Ms. Birgfeld replied that there are three levels of sponsorship: platinum, gold, and silver (currently listed online) and that the costs of sponsoring specific events (dinner, coffee, etc.) could be tailored to meet specific funding needs.

Mr. Talkington raised three questions to Ms. Birgfeld:

- Have the Expo program agendas for the different sectors (coal, agriculture, oil and gas, and landfills) have been determined, and if the goal of this meeting was to set a goal for the Subcommittee? Ms. Birgfeld responded yes and that the issue would be discussed in more detail later.
- Would simultaneous translation would be available for a third language, like Russian or Ukrainian? If there is a significant expense, he stated that the United Nations might be able to support this effort. Ms. Birgfeld responded there will be translation from English to Chinese and vice versa, and that Expo documents will be translated into Chinese. As for a third language, it was not currently being considered but the ASG will look into the possibility.
- Would UNECE-submitted projects need to be transferred to the Methane to Markets project template? Mr. Ray Pilcher with Raven Ridge Resources responded to the question at the behest of Ms. Birgfeld: what was important in the project opportunity templates was including critical project information to move the project forward. Therefore, UNECE templates were probably just fine. The project posters that will be exhibited at the Expo would look the same regardless of which template was originally used.

Mr. Gunning also responded to Mr. Talkington’s third question, by stating that the Coal Subcommittee wants as much project information as possible on CMM projects. The project opportunity template is the critical information for a CMM project that the ASG can use and, working with template submitter, create a high-quality poster. The ASG will not provide technical support filling out the project templates, but they will help make an excellent poster and printed flyer presentation out of the project opportunity templates. CCII will print these materials for the Expo. If technical assistance is required, U.S. EPA might provide it through the Coalbed Methane Outreach Program (CMOP). He also reminded attendees of the 2 July 2007 deadline for submitting project opportunity templates.

Mr. Richard Mattus of MEGTEC Systems asked two questions.

- Will Vietnam be joining the Coal Subcommittee? Ms. Birgfeld stated that Vietnam will eventually participate in the Coal Subcommittee, but will not currently work on it. The country is more involved with the Agriculture Subcommittee since there are a large number of hog farms in Vietnam.
- How much business response exists from the current solicitation efforts, and does there need to be more intensive marketing performed by the Coal Subcommittee? Ms. Birgfeld answered there was some business interest and if Mr. Mattus wanted to share any ideas with the ASG about better publicizing the Expo to the business community, that would be most appreciated.

Mr. Gunning commented (regarding sponsorship and support for the Expo) he recently traveled to Manila to speak with representatives of the Asian Development Bank (ADB), who agreed to become a Project Network member. Mr. Gunning further stated they will be a key organizational sponsor for the Expo, leveraging \$75,000 for travel expenses for projects where the bank is working. In addition, other organizations have been warmly received. That said, the Subcommittee and Project Network members still need to carry the Expo sponsorship message to other organizations and get robust support from banks and the private business community.

One European Union attendee asked if C in light of the ADB involvement C the World Bank would be involved in the Expo, especially given its participation in the gas flare initiative. Ms. Birgfeld answered that World Bank's Chinese offices are very interested in agriculture and perhaps coal issues. However, U.S. EPA's interactions with the World Bank have taken place in Washington, DC (where the World Bank is headquartered) and do not indicate over-arching or global support. Mr. Gunning added the World Bank is a large, fragmented organization and encouraged anyone that does work with the World Bank to push for their involvement.

Ms. Samantha Scott with the Australian Department of Industry, Tourism and Resources wondered what the other subcommittees were doing to prepare for the Expo and if the other subcommittees developed similar project opportunity templates. Ms. Birgfeld responded that the subcommittee project opportunity templates were very different from each other and stated that the coal template is the most detailed one. The oil and gas template requires merely a narrative description while the agriculture template is a little more detailed, but still shorter than the coal template. Ms. Birgfeld is requesting project opportunity templates for landfills.

Mr. Hideo Shindo with Japan's New Energy and Industrial Technology Organization (NEDO) asked about the number of projects currently entered into the online tracking database. Ms. Birgfeld stated that at the present time, the online tracking database is too complicated and therefore, the ASG propagated the current project data in the database themselves. The ASG will gather more data over the summer to develop a more streamlined project template that is easier to use.

Report from Coal Task Force on Partnership Expo (*see Annex 5*)

On behalf of Dr. Franklin, Mr. Pilcher outlined the history of the Expo Task Force and described:

- Types of project opportunity templates: The Preliminary Assessment Template (shorter template) is designed for a project that has not had a pre-feasibility study or there is not enough information for the Detailed Assessment Template (longer, full template). The detailed template should be filled out only after a pre-feasibility study as well as some conceptual project design.

- Methods for showcasing projects at the Expo: either as a flyer and/or as a poster. Examples of two high quality projects were included in the meeting folders. Both the project brochures/flyers and the posters would be prepared by the ASG. Poster guidelines are currently being developed. Model posters will be created for displaying projects that meet the threshold information criteria, which include: (1) descriptions and general information on the host mine and project site; (2) specific outlines of project design; (3) calculations of the projected emissions reductions for the project; and (4) forecasts of economic performance.

Mr. Pilcher also outlined the coal-related portion of the Expo agenda (see Annex 3 for 2007 Expo Draft Agenda):

- Session One: focus on advanced technology applications for CMM such as degasification and ventilation air methane (VAM).
- Session Two: highlight projects that offer insight into other technical issues and project implementation barriers encountered during CMM project development.
- Session Three: policy and finance issues that many projects worldwide share.

Mr. Pilcher stated there is significant remaining work in order to ensure a successful Expo:

- Identify high quality projects, particularly since meeting participants previously heard from the UNECE that there is sufficient funding for project development
- Identify and encourage sponsorship.
- Encourage attendance. While the ADB is leveraging some travel, Project Network members should think about cashing in frequent flyer miles to provide travel funds.

Mr. Jack Segal with Energy Resources International stated there are a large number of CMM projects around the world that would make excellent showcase projects at the Expo, but he feels that these projects are usually running into problems; problems that have nothing to do with funding or pre-feasibility studies. Mr. Segal stressed that many projects are held up indefinitely by regulatory and bureaucratic barriers to actual project implementation. Mr. Segal then requested if the Expo Task Force had considered supplying speakers that would discuss the kinds of project development barriers they are facing and to discuss lessons learned for a broad range of issues (policy, technical, etc.). Mr. Pilcher said he thought that there was enough latitude in the agenda to incorporate policy and project implementation barriers. The discussion could fit into the second session as some issues had not been resolved yet on a policy basis. Mr. Gunning suggested the Task Force identify those problems and that they be added to future Expo Agendas. Mr. Talkington suggested including a roundtable discussion, which are good at generating dialog and encourage more candid discussion.

Dr. Jayne Somers also followed up on the issue of project implementation barriers, stating that Session Three is currently focused on project financing issues but some of the ownership and regulatory problems that can inhibit project implementation might also be included. Mr. Shindo asked if Session Three might also include discussions with Project Network members that would share information and experiences regarding project implementation barriers. Mr. Gunning requested that the third session of the Expo include a stronger policy focus. He stated that all **Project Network members should submit session or topic ideas to the ASG and Expo Task Force**, in order to make the Expo agenda more robust.

Mr. Gunning commented that while the agenda was well-developed (e.g., addressed technical issues, case studies), he wondered if it might be useful to provide the bigger picture. The Expo

will be widely attended by more than 600 people and it is reasonable to expect that some attendees might not know much about CMM. Therefore, Mr. Gunning suggested adding one or two presentations upfront that sets the tone of the global issues for CMM development. These sessions might also be useful to highlight what the Coal subcommittee has done (e.g., global database, county profiles). Ms. Birgfeld indicated that the issue of “what is methane and why is it important” might be captured in the broad overview during the plenary session but it would be beneficial to provide a sector-specific overview.

Mr. Gunning thanked everyone for their input. He indicated there were many useful suggestions that will help improve the agenda (e.g., specific topics) and encouraged the participant to continue to think about these issues, reach out to colleagues and peers as much as possible, and incorporate as many of these suggestions into the Coal agenda.

Country Updates

Australia

Ms. Scott reviewed the country’s preparation for the upcoming Expo:

- Working closely with the agriculture and landfill subcommittees to develop a coordinated marketing strategy to target all sectors together. However, Australia will focus on their work within the Coal Subcommittee, since 3.1 percent of Australia’s of net greenhouse gas (GHG) emissions is from black coal emissions.
- Looking to mitigate technical and financial barriers to CMM technology use, and linking these efforts to Expo.
- Developing a grant program to encourage mining companies to join the Project Network and promote the Expo. The grant program is dependant upon the Australian budget process, which may cut some funding, which would limit the amount of financial support that Australia could give to Expo participants. These issues should be resolved soon.
- Australia is expecting one or two government officials will attend the Expo in October.

Mr. Gunning asked if the Australian grant program would encourage CMM project development. Ms. Scott indicated yes and details would be announced in the coming weeks. Ms. Birgfeld requested Australia send a press release to the ASG when it announces the program.

China (see Annex 6)

Mr. Sun described China’s Expo preparations, including:

- Setting up a CCII task force for the Expo.
- Assisting EPA in translating printed outreach materials and the Expo Web site into Chinese.
- Facilitating and coordinating Expo logistics, such as negotiating with the China World Hotel.
- Working with various Chinese government agencies (NDRC and other ministries).

Mr. Sun outlined China’s next steps for continued Expo facilitation:

- Send out invitations to all foreign Methane to Markets Partners
- Identify final members for the Chinese Organizing Committee and submit list to EPA.
- Improve the Chinese Expo Web site and enhance their Expo outreach materials.
- Coordinate the efforts and exhibits for the four sectors.

- Finalize the Chinese delegates that will attend the Expo, including the NDRC Chairmen and Secretary-general, and possibly officials from Agriculture, Foreign Affairs and Construction, as well as representatives from China National Petroleum Corporation and China National Offshore Oil Corporation.

Mr. Shindo wondered how many participants from China are expected at Expo. Mr. Sun stated that more than 100 Chinese participants would most likely attend. He added that all Chinese Expo participants would be high-level Government officials.

Germany

There were no representatives from Germany present at the meeting.

India (see Annex 7)

Dr. Chaudhuri outlined the current status of CMM work in India as well as efforts for the Expo including soliciting Expo sponsors (e.g., personally wrote to the Chairman of Coal India Ltd.), although no not definitive responses from the Indian companies as of yet. He indicated India is focusing mainly on two coal fields (e.g., Singrauli and Korba). Dr. Chaudhuri also outlined the type of mining operations in India (mostly open cast) and concluded his presentation by proposing to focus on some of the Indian coal fields currently under development for the Expo.

Mr. Karl Schultz of Climate Mitigation Works Ltd., asked how much technical work has been done to drain the methane from these open cast mines in India. Dr. Chaudhuri responded that some studies performed to estimate that number but further studies will be required to obtain more data.

Italy

Mr. Fabrizio Pisanu stated that Italy is excited about the Expo and would coordinate their Expo involvement across the four subcommittees. He was unable to outline specific contributions at this time, but Italy is strongly promoting internal support. Italy is preparing its CBM project templates but there have been some technical delays (anticipate submittal in August).

Japan (see Annex 8)

Mr. Shindo reviewed Japan's various activities in support of the Expo, including:

- Speaking with several companies that are interested in participating in Expo either as speakers and/or sponsors.
- Identifying potential session topics such as technology versus regulation debate (e.g., utilization of low concentration methane, which would mitigate the current problems and prohibitions regarding the use of low concentration methane at some CMM sites).
- Providing travel support for four to five participants to attend Expo.
- Developing project opportunity templates.
- Funding project opportunity templates for other Partners (e.g., Argentina).

Mr. Gunning extended his personal appreciation to Japan for their travel support and tying that support to the constructive production of project opportunity templates.

Mexico (see Annex 9)

Mr. Ramon Carlos Torres Flores with Ministry of the Environment and Natural Resources reviewed the current status of coal mining and CMM projects in Mexico, adding that it is politically important to the Mexican government to reduce GHG emissions. According to Mr. Flores, Mexico's involvement in the Expo will set a good precedent for future growth in the

CMM industry. He also indicated the government and private sector need technical and financial assistance to implement more projects in this budding Mexican industry. Mexico has identified one project and is interested in performing additional feasibility studies on this CMM location.

Mr. Gunning thanked Mexico for their presentation and outlined how the country recently performed significant overhaul of coal mining regulation, so that Mexico could move forward with their prospective Methane to Markets projects.

Nigeria

Mr. Solomon Adesanya with the Federal Ministry of Environment opened his remarks by stating that the Federal Republic of Nigeria was the only African country in attendance, but that the country possessed significant coal reserves: the Niger Delta area holds approximately 63 million tons of coal. Currently, the development of these coal fields C and associated emission levels C is high. He indicated that Nigeria needs to attract investment in this area and the country needs additional data for ADB, and would appreciate any help the Project Network could offer in facilitating the gathering, revising, and updating CMM data for pre-feasibility studies.

Mr. Adesanya continued by stating that the Niger Delta's CMM development plan is still unspecified; the country needs help with funding drainage systems, creating timeframes for construction, generating business plans, and outlining projected capital and operation and maintenance costs. One of the main issues is getting all of this information to investors, which is currently a major problem.

Nigeria is active in the landfill and oil and gas subcommittees and is willing to showcase potential project opportunities at the Expo.

Poland (See Annex 10)

Mr. Jacek Skiba gave the report for Poland which outlined the following points:

- Poland has 33 coal mines currently in operation; 29 of which possess methane coal mines and 21 of those possess degasification installations.
- Responsibility for capturing and utilizing methane falls between two Polish agencies: Ministry of Economy (coal mines, oil and gas systems) and Ministry of Environment (landfills).
- Estimates for the values of methane used to generate power in the country and what opportunities still exist to capture and use methane that is currently vented into the atmosphere.
- The Central Mining Institute's conference in Krakow, scheduled for 20 September 2007. The Methane to Markets Subcommittee could give a presentation or send over materials for the conference and that the conference could be advertised on the Methane to Markets Web site.

Mr. P.R. Mandal stated that Poland is generating significant amounts of methane and was curious why the country was not utilizing more of the CMM. Mr. Skiba stated that all the Polish coal mines very deep and many are joined together underground, making it difficult to capture and utilize all the methane. In addition, there were funding difficulties in the past, but now companies are sure that they could finance projects themselves. There is currently a **need for feasibility studies** and expert direction regarding what technologies should be in Polish CMM projects.

Mr. Pilcher stated he was confused by some emissions research from Poland; that CMM are not part of the inventory that is supplied to the European Union. That these CMM are not quantified

at this point? Mr. Skiba thought that Mr. Pilcher was referring to a study in the early 1990s in Poland when there was a big boom in CMM investment. Emissions were measured from satellite pictures and, at the time, there were many factories in the area which were added into the model assumptions and altered the abatement predictions (poor data and modeling); now there is a very good database and is collected annually.

Russia

Mr. Vladislav Karasevich of Prom Gas is working in two areas in CMM and they reported on these activities, which include:

- A trial project in the Kuzbass basin, Leninskugol mine, adapting CMM technology to Russian mining conditions. The company drilled four bore holes last year and they will continue this trial run for the remainder of this year. For next year, the company will increase the project's size to an industrial scale.
- A project in conjunction with Russian research organization to recycle and use CMM. Last year the company performed trials on a 1 megawatt (MW) boiler powered by CMM from a working mine and the project is working fine.

Prom Gas will exhibit at the Beijing Expo under the Russian exhibition and there will be more information available then.

Ukraine

There were no representatives from Ukraine present at the meeting.

United Kingdom

There were no representatives from the United Kingdom present at the meeting.

United States (See Annex II)

Dr. Jayne Somers of the U.S. EPA outlined what activities the United States performed in preparation for the 2007 Beijing Expo and included the following topics:

- Working on many individual CMM project opportunity templates.
- Facilitating and developing the CMM China information clearinghouse.
- Launching the CMM India information clearinghouse and the MOU was signed.

Project Network Member Updates

Mr. Gunning opened the floor to Project Network Members to speak about interest and plans to support and attend the Expo.

United Nations Economic Commission for Europe (UNECE)

Mr. Talkington stated that UNECE does plan to participate in the Expo by sending three staff members to Beijing and will support the Expo with the following activities:

- Participate in finance session if the Expo agenda is modified to include policy and regulatory issues.
- Provide travel funding to the Expo CMM experts that are part of the UNECE.
- Encourage colleagues to sponsor the Expo at the silver, gold, and platinum levels.
- Review and support the drafting of project opportunity templates from European countries, especially those from Central European nations. Some of these templates may be from non-Methane to Markets Partners: Kazakhstan for example.
- Add a direct link from the UNECE Web site to the Expo Web site.
- Approach the United Nations Development Program regarding Expo participation or providing travel support for other CMM experts.

Mr. Talkington and Mr. Pilcher brought the idea of parallel sessions to the floor and the idea was supported by Mr. Shindo. The parallel session was accepted by the subcommittee and Mr. Gunning requested that Project Network Members **suggest speakers** and **provide input to the Task Force**. Mr. Gunning then stated that the Task Force has more work to do; training in particular requires expertise and funding to make happen.

MEGTEC

Mr. Mattus of MEGTEC stated that the company, along with Poland, will support the Expo through direct sponsorship and by sending individuals to the conference. In addition, MEGTEC will host a booth and present information on VAM technology: specifically reporting on the results of a 5 MW VAM powered test project.

Green Gas International

Mr. Schultz stated he will be on UNECE team but that **Green Gas International** will sponsor the Expo and actively participate in the event.

Ecosecurities

Mr. Richard Rozwadowski of Ecosecurities added that the company will be involved in the Expo and there was interest in some kind of sponsorship for the event. Mr. Rozwadowski reviewed the status of a Ukrainian mine project at a coal mine where 80 million tones of coal per year is excavated. The mine is an excellent project opportunity, with a high concentration of methane, and both Ecosecurities and the Ukrainian government are very interested in funding feasibility studies.

Review of Action Plan

Mr. Gunning opened the meeting to the Coal Subcommittee's action plan. First there was a review of the online project database and the technology database.

International Project Database (USA)

Dr. Somers reviewed the status of the online project database.

- Expected to be a highly transparent clearinghouse of project information.
- Will be continually revised over its lifetime as a work in progress:
- Currently delayed a little.
- ASG wants to receive data to review and input into the database: Poland and UK should please send project data.

Dr. Somers stated that she would like to get the contact information for mines that the United States and ASG are currently lacking.

Technology Database (Australia)

Ms. Scott spoke about the Australian generated technology database, which is intended as a useful reference for CMM technologies. Ms. Scott updated the database after receiving comments from EPA and Japan and she hopes to publish in a few weeks on the Methane to Markets Web site. Ms. Scott stated that she would like any additional comments on the technology database and that she will revise and update it periodically. In addition, Australia—with the help of Project Network Members—will insert appropriate company contact information for each technologies listed in the database.

UNECE Project Financing Program

Mr. Talkington stated that an update was outlined at the beginning of yesterday's morning session and would let that update stand.

General Updates for Action Plan Activities

- Australia: looking at programs to capture and use of CMM in black coalmines. The program announcement will be released in the number of weeks.
- United States: finalizing the agreement with India for the information clearinghouse. Dr. Chaudhuri will head the effort and there will be a kick off event in the fall, sponsored by the U.S. Trade and Development Agency and US EPA.
- India: putting the finishing touches on the clearing house: the memorandum of understanding was signed and as site was selected at the Central Mine Planning and Design Institute (CMPDI) in Ranchi.
- Japan: contributing to the travel support fund for the Expo. Japan will summarize all project and travel funding in a database. Dr. Somers requested that Japan and the United States communicate and coordinate their funding efforts to minimize duplication.

Mr. Gunning requested that for the post-lunch discussions, everyone to think about how the barriers to project implementation are well documented. In addition, is there more bilateral or multilateral activity that would overcome these barriers?

Mr. Gunning opened the floor to (1) assess and re-analyze the Coal Subcommittee's action plan and (2) brainstorm on ways to improve the plan.

Mr. Shindo raised two points:

- First, the Coal Subcommittee must follow the guidance of the Steering Committee regarding what the Coal Subcommittee should do at the Expo. Do we need to outline all of our Expo activities to the Steering Committee in our report?
- Second, to improve the Steering Committee's success at CO₂ abatement, we should have a better understanding of the business community and evaluate public and private sector's roll. Maybe immediately after the Expo the Subcommittee should evaluate what governments could do to help to facilitate the business environment for CMM projects.

Mr. Gunning responded stating the Steering Committee needs a status report from the Coal Subcommittee the day before the Expo begins. The critical component of that report will outline what the Coal Subcommittee is bringing to the Expo, highlighting coal projects and other activities.

Mr. Gunning continued discussing the next steps for the Coal Subcommittee action plan.

Suggestions for improving the action plan included:

- **Communicate with Project Network to solicit broader input for the Partnership – cast a wide net.**
- Mr. Shindo suggested after the Expo, each member country could re-write their country profile, specifically citing project implementation barriers that exist in their country. A task force appointed by the Subcommittee could then analyze each of these barriers and look for cost-effective ways to mitigate them.
- Mr. Talkington stated that it may be worthwhile to reevaluate the CO₂ abatement goals, since it has become evident that projects have not been implemented as quickly as people thought. Ms. Birgfeld replied that it might be useful to educate the Steering Committee on the issues surrounding CMM project implementation, so that they are not disappointed with the Coal Subcommittee's progress.

- **Actively solicit more representation and participation by the coal mining industry**, which could help overcome barriers to project implementation. Ms. Bastien wondered if those assembled at the meeting were positive that coal miners' motivation is production and safety. Why would they be interested in Methane to Markets projects? She stated that there should be more mining representatives at the meetings so their views could be shared with the larger audience. Mr. P.R. Mandal replied to Ms. Bastien that it takes time to inform and educate people – that was the experience in India and the United States.

Mr. Shindo posed a procedural question: expect input for project members then there is a refined draft then how does this become a finalized project template? Mr. Gunning responded that once the project template is in to the ASG, due to time constraints, the task force is authorized to make the final decision and modifications to the project templates. Unless there is major objection, is the task force comfortable when that?

Mr. Shindo responded that yes, as a task force member that this will work and for time constraints it is reasonable and practical. Mr. Gunning said we need input from everyone but as there is no objection, he views acceptance.

Mr. Pilcher wondered if the Coal Subcommittee could **host a table** at the Polish mining conference on September 20, 2007. He stated it would be a good way to **bring more countries into the Partnership**. Ms. Birgfeld stated that the ASG would work with Poland and send a table and/or additional materials to the conference. Dr. Somers stated that EPA and CMOP own free-standing banners and posters for the Expo that could be added to highlight the table.

Mr. Grobmyer stated that his company is involved in discussions with 11 different countries and suggests the following points to improve the business environment:

- 1) Create an ombudsman position for each member country that would assist CMM project developers – a kind of “a one-stop shop” for important CMM processes, permits, and issues.
- 2) Generate a model incentive package for CMM projects that all member countries would adopt and that might include a model regulation proposal. For example, Mexico made great strides to overcome regulatory issues.
- 3) Facilitate and standardize the monetization of emission credits and work to maximize them for each CMM project. Possibly by setting up a task force to review emission credits in both number and value for CMM projects.

Mr. Talkington supports idea for a central point of communication (ombudsman), since that individual would act as an information conduit to important country agencies and research institutions. Mr. Shindo agreed, but also asked if the clearinghouse in India would function in the same way—as a one-stop shop? Also the different ministries are often very difficult to have “ombudsman” depending on country's status. Mr. Pilcher agreed with Mr. Shindo and stated that it is often difficult to just determine what departments or ministries should be contacted. The Coal Subcommittee could perform a survey of the different partner countries to discover what ministries must be contacted to successfully implement a CMM project in each member country.

Mr. Gunning stated he agreed with Japan that finding one person—a one-stop shop—would be very difficult. If every country supplied a document as a guide to CMM development in their own country, that might be a simpler solution; **a roadmap for CMM project development**. Currently, country profiles do have contact information, but it is not always up-to-date; the ASG can reach out to different partners and ask for a central point of contact.

Dr. Somers added that the clearing house in India is similar to a one stop shop, and contain the latest information for CMM project development.

Mr. Gunning stated that for Mr. Grobmyer's second suggestion, regarding model incentive packages for CMM project development could be discussed at the Expo. Please submit further suggestions to the ASG regarding this issue.

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**METHANE TO MARKETS PARTNERSHIP
COAL SUBCOMMITTEE MEETING
3-4 APRIL 2007
GENEVA, SWITZERLAND**

FINAL AGENDA

- 3 APRIL 2007** *Note: The Meeting of UNECE Ad Hoc Group of Experts will convene at 10:00 AM on 2 April 2007, and is expected to adjourn by 1:00 PM on 3 April 2007, before the lunch break. Subcommittee Members are welcome and encouraged to attend the UNECE Meeting. All participants MUST pre-register through the UNECE to obtain security clearance.*
- 2:00 PM – 3:00 PM Onsite registration open - Concurrent with UNECE meeting of Ad Hoc Group of Experts on Coal Mine Methane
- 3:00 PM Welcome (Subcommittee Co-Chairs and Vice Chair)
- 3:10 PM Brief introduction of all meeting participants
- 3:20 PM Adoption of Agenda
- 3:30 PM Report from Administrative Support Group (ASG)
- Steering Committee meeting and review of charges to Subcommittees
 - Report from Partnership Expo status and progress
- 4:00 PM Report from Coal Task Force on Partnership Expo (Member of Task Force)
- Draft coal sector agenda
 - Project opportunity presentations
- 4:15 PM Discussion / Questions regarding Partnership Expo format
- 4:30 PM Coffee / tea break

Annex 2 – 6th Coal Subcommittee Meeting Final Agenda

- 4:45 PM Updates from Countries regarding planned participation in Partnership Expo
Countries expected to participate in this discussion if present:
- *Australia*
 - *Argentina*
 - *China*
 - *Germany*
 - *India*
 - *Italy*
 - *Japan*
 - *Mexico*
 - *Nigeria*
 - *Poland*
 - *Russia*
 - *Ukraine*
 - *United Kingdom*
 - *United States*
- 6:00 PM Adjourn
- Evening, time TBD Reception
- 4 APRIL 2007**
- 10:00 AM Reconvene
Continue with country updates re: participation in Partnership Expo, as needed
- 10:30 AM Update from Project Network regarding their planned participation in the Partnership Expo (Members of the Project Network)
- 11:30 AM Tea / coffee break
- 11:45 AM Updates on general action plan activities
- International project database (USA)
 - Technology database (Australia)
 - UNECE project financing program (UNECE)
 - Any general updates (ASG)
- 1:00 PM Lunch break
- 3:00 PM Summary discussion regarding Partnership Expo follow-up items, including:
- Subcommittee endorsement of Coal Sector agenda for Expo

Annex 2 – 6th Coal Subcommittee Meeting Final Agenda

- Identify gaps / needs in developing project opportunity templates / posters / brochures for Expo
- Any unresolved questions or issues

4:00 PM	New business
4:30 PM	Coffee break
4:45 PM	Summary / wrap up
5:30 PM	Conclusion of UNECE Ad Hoc Meeting of Experts
6:00 PM	Adjourn



**2007 Partnership Expo
Coal Break-Out Sessions**

**DRAFT AGENDA
FOR REVIEW AND COMMENT ONLY**

Session 1. Technology Case Studies

Wednesday 31 October

14.30 – 18.00 (2:30 PM – 6:00 PM)

(3 hour session plus coffee break)

The focus of this session will be to highlight cutting-edge technologies of two main types: (1) Methane extraction / capture and processing; and (2) Recovery and utilization of ventilation air methane (VAM). The session is designed to focus on real-world case studies in which these technologies have been demonstrated. Each speaker will be allotted 20 minutes for the Presentation and 10 minutes for questions and answers (to be facilitated by the Session Chair). Short descriptions of each technology follow.

NOTE: IN ORDER TO ALLOW ADEQUATE TIME FOR EACH PRESENTATION AND DISCUSSION, ONLY SIX (6) OF THE FOLLOWING EIGHT (8) OPTIONS WILL BE SELECTED

Time	Topic	Presenter
<i>Part 1: Methane Capture, Processing, and Utilization 14:30 – 16:00 (Three, thirty minute talks – need to select three options)</i>		
Option 1	Advanced drilling techniques used in the Shenhua, China, degasification project	Mitchell Drilling/Valley Longwall (Aus)
Option 2	Advanced US drilling / degasification technology, such as directional drilling, using example of successful project. For example: <ul style="list-style-type: none"> ○ CDX or CNX describing example at US coal mine ○ REI Drilling (at US or overseas mine?) 	CDX / CNX or REI Drilling (USA)
Option 3	Advanced gas upgrade / decontamination systems for improving gas quality, based on case study of successful project. For example: <ul style="list-style-type: none"> ○ BCKK cryogenic process ○ Molecular sieve / pressure swing adsorption technology (Guild Associates) 	BCKK or Guild Associates (USA)
Option 4	Japanese technology to upgrade low-quality CMM using filtration with activated carbon	Gas & Power Investment Co. Ltd (Japan)
<i>16:00 – 16:30 Coffee Break</i>		

Part 2: 16:30 – 18:00 Ventilation Air Methane Utilisation (Three, 30 minute talks) – need to select 3 options		
Option 1	Vocsidizer VAM Technology (case studies in Australia and USA)	Richard Mattus MEGTEC (Sweden)
Option 2	VAMCAT demonstration project in China	Dr Shi Su CSIRO (Aus)
Option 3	ComEnergy Rotary Kiln: China case study	ComEnergy John Hocken (Aus)
Option 4	Gas Engine Power Generation for VAM and CMM	Mitsubishi Heavy Industries (MHI) and/or JCOAL (Japan)

Brief summaries of technologies/presentations

Shenhua Degasification Project: Drilling technologies

China's giant Shenhua Group has awarded a A\$10M coal mine gas drainage contract to a joint venture including Australian Mining Services International (AMSI). The multi-company deal opens the door to Chinese operations for leading Australian coal seam gas specialists, namely Valley Longwall Drilling, Mitchell Drilling and GeoGAS. PACE Mitchell Drilling expects to receive about 55% of the total contract value.

The partners will conduct 44,000mtrs of surface-to-inseam (SIS) drilling using Mitchell Drilling's Dymaxion platform, while Valley Longwall conducts in-seam drilling underground. The deal is significant in that it is the first time Shenhua has adopted SIS technologies being promoted in China by Australian companies. AMSI has been working on the project through a joint venture with China's State Administration of Work Safety.

The Baijigou is a medium-sized Shenhua mine, producing 1.94Mt ROM last year, but it is one of Shenhua's very few anthracite mines. The Dymaxion technology also will be used to drill for coal seam gas within PACE's Guizhou mine gas project in the near future. According to PACE, other foreign operators of CSG projects in China have expressed interest in using the technology.

The Shenhua degasification project has been nominated as one of six special safety projects for 2007 by the State Administration of Coal Mine Safety.

(Source: International CSG, Issue 080, Feb 2007)

Directional Drilling / Degasification in USA: CNX or CDX or REI Drilling

Three leading companies responsible for various degasification projects discuss a case study at a US coal mine (which mine would depend on which organization participates).

Advanced Decontamination / Gas Upgrade Systems

BCKK has several large plants worldwide (USA and Australia) to process coal mine methane to meet natural gas pipeline specifications, removing N₂ via a cryogenic process, as well as removing water, CO₂, oxygen, and other contaminants as needed.

Other technologies to clean coal mine methane include pressure swing adsorption, molecular gate technologies.

VAMCAT

A new CSIRO technology called VAMCAT (Ventilation Air Methane Catalytic Turbine) is poised to take a sizable bite out of methane emissions with a Greenhouse effect equivalent to more than 237 million tonnes of carbon dioxide.

CSIRO and the Australian Greenhouse Office together with China's Shanghai Jiaotong University and Huainan Coal Mining Group will construct the first pilot-scale demonstration unit at a coal mine in China. The low-heating value gas turbine will be powered by about 1 per cent methane in ventilation air. It will generate green power while also consuming the mine's fugitive methane, which is 23 times more potent than carbon dioxide as a greenhouse gas over a 100 year time frame.

ComEnergy Rotary Kiln

Although several waste coal burning technologies already exist, ComEnergy designed and developed a plant with new technology that allows waste coal and methane to be burnt efficiently to produce electricity.

It is a simple, flexible and inexpensive process, with a typical plant producing 10 megawatts of electricity, which can be used to power the mine's own operations, and the surplus fed back into the power grid for general consumption.

The system has the potential not only of reducing emissions from coal mines, but also significantly reducing greenhouse effects by displacing hundreds of megawatts of electricity already in the power grid with electricity fuelled by burnt methane.

ComEnergy has projects in Australia, China and India.

Session 2. Coal Mine Methane Project Case Studies

Wednesday 31 October

10:00 AM – 12:30 PM

(2 hour session plus coffee break)

The focus of this session will be to highlight examples of successful, ongoing projects from a range of countries and end-uses, not simply from a technology perspective but also from an overall project development perspective. Specific case studies should be selected so that there is diversity across projects, project end-uses, and countries across sectors.

One possible suggestion would be to include (in addition) extremely short, 1 minute "mini-advertisements" for developing project opportunities – to encourage participants to go visit the site opportunity posters for specific coal mine projects in the Exhibit Hall, which will be accessible during morning registration sessions, lunch breaks, and the receptions. The potential problem with this would be that it would reduce the actual time available for the presentations.

Annex 3 – Draft Agenda for 2007 Partnership Expo Coal Break-Out Sessions

This session only allows for 2 hours (1 hour, short break, then 1 hour). Therefore, in order to provide for a greater diversity of projects to be presented, each presentation will only be allocated 20 minutes total: 15 minutes for the talk plus 5 minutes for questions. This schedule will allow a total of 6 case studies to be presented.

NOTE: TIMES ARE REPRESENTATIVE ONLY; INDIVIDUAL TALKS SUBJECT TO BEING RE-ORDERED

Time	Topic	Presenter
10:00 – 10:20	Case study: China <ul style="list-style-type: none"> ○ Huainan Mining Group (power generation) or ○ Tiefu Mining Group (town gas) 	To be determined
10:20 – 10:40	Case study: Australia <ul style="list-style-type: none"> ○ Appin/Tower – world’s largest power generation project (94 MW), or ○ Moura Mine – pipeline injection, draining from both underground and highwall mine 	To be determined
10:40 – 11:00	Case study: USA <ul style="list-style-type: none"> ○ Active mine, large-scale gas pipeline sales project (one of several projects – Consol Energy or Jim Walters Resources), or ○ Abandoned mines, combined projects for pipeline sales and other end uses 	To be determined
<i>11:00 – 11:30 Coffee Break</i>		
11:30-11:50	Case study: Ukraine <ul style="list-style-type: none"> ○ Zasyadko Mine (60 MW power generation), or ○ Komsomolets Donbassa or Khrustalskaya (heat and power generation) 	To be determined
11:50 – 12:10	Case study: Russia <ul style="list-style-type: none"> ○ Severnaya Mine (heat ventilation air, coal dryers, gas engines), or ○ Komsomolets or one of several others (boiler fuel) 	To be determined
12:10 – 12:30	Case study: Abandoned mine project in Germany or United Kingdom or active mine project in Poland <ul style="list-style-type: none"> ○ Power generation (many mines to choose from in each country) 	To be determined

Session 3: Policy and Finance Issues

Wednesday 31 October

14:30 – 17:30 (2.5 hours total plus coffee break)

2:30 PM – 5:30 PM

The focus of this session is to discuss some of the challenges to financing coal mine methane projects, using real world examples in M2M Partner countries, and to discuss how some of those challenges have been met. Thus, each discussion will have a “lessons learned” component as a critical element. The presentations should allow for ample audience participation.

Annex 3 – Draft Agenda for 2007 Partnership Expo Coal Break-Out Sessions

Time	Topic	Presenter
<i>Financing CMM Projects in Former Soviet Union & Eastern Europe</i>		
14:30 – 15:15	UNECE Case Studies: Developing Investment Documents for CMM Projects in the Former Soviet Union and Eastern Europe – Lessons Learned	Clark Talkington, UNECE
15:15 – 15:30	Questions / Discussion	
<i>Coffee Break</i>		
<i>Financing CMM Projects in Asia (China) and Addressing Project Financing Risks</i>		
16:00 – 16:30	Case study: CMM Financing in China (possible example: Sihe Mine, Jincheng project)	Asian Development Bank
16:30 – 16:45	Questions & Discussion	
16:45 – 17:15	Financing CMM Projects: Overcoming Political and Project Risks	World Bank? ADB? Private investment firm? Other?
17:15- 17:30	Questions & Discussion	

Other potential issue to include in addition to financing: technology vs. regulation (provide example)



Methane to Markets

Slide 1



Methane to Markets

Administrative Support Group (ASG) Update

UNECE
Geneva, Switzerland
3 April 2007

Erin Birgfeld, Director
Administrative Support Group (ASG)

Slide 4



Partner Update = 20 Countries



Argentina	India	Republic of Korea (South Korea)
Australia	Italy	Russia
Brazil	Japan	Ukraine
Canada	Mexico	United Kingdom
China	Nigeria	United States
Colombia	Poland	Viet Nam
Ecuador		
Germany		

Slide 2



Overview

- Partnership Background and Partner Update
- Steering Committee Meeting Outcomes
 - Miscellaneous Business
 - Year 3 Charge to Subcommittees
- Partnership Expo Planning and Next Steps
 - Expanded Web site
 - Marketing and Outreach
 - Call for Projects
- Tracking M2M Progress
- Other Announcements

Slide 5



Steering Committee Meeting – Activities and Outcomes

- Heard country statements and Partner updates.
- Received progress reports from Subcommittees.
- Reviewed outreach and communications efforts.
- Discussed procedures for adding New Steering Committee Members (agreed to status quo).
- Reviewed online Project Tracking system.
- Developed Year 3 Charge to Subcommittees.
- Nominated US to host ASG functions for two more years and continue to serve as Steering Committee chair (US accepted).

Slide 3



Partnership Overview

- Advances recovery and use of methane as a valuable clean energy source.
- Encourages development of **cost-effective** methane recovery and use opportunities in:
 - Agriculture (e.g., animal waste management)
 - Coal mines
 - Landfills
 - Oil and gas systems
- Poland and Vietnam joined = 20 Partner Countries (see map next slide).
- Private companies, multilateral development banks and other relevant organizations participate by joining the **Project Network – more than 500 organizations now participating.**

Slide 6



Steering Committee Meeting – Activities and Outcomes (con't)

- Decisions on Partnership Expo
 - NDRC will be official Ministry to Host Event.
 - Reduced event duration to 3 days.
 - Agreed not to make ministerial-level event.
 - Asked Partners to consider levels of commitment (e.g., financial, in-kind services) and encouraged participation in the Expo (i.e., attendance).
- Agreed to develop of Partnership-wide accomplishments report in mid-2008. Will include results from the Expo.

Slide 7



Partnership Expo: A Forum for Projects, Technology, Financing, and Policy

- Premier international forum for promoting methane recovery and use project opportunities and technologies.
- Provides Partners and Project Network members with opportunities to:
 - Showcase project opportunities and technologies.
 - Meet with potential project partners and financiers.
 - Learn about the latest technologies and services.
 - Explore key technical, policy, and financial issues.
 - Interact with high-level government officials from 20 Partner countries.

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Slide 10



Expo Sponsorships and Exhibits

- Paying sponsors will be provided booth space to display information relating to their organization, company, or technology.
- Each Partner country will be provided a free booth to highlight activities under the Partnership and to feature project opportunities.
- Free space will also be provided to display specific project opportunities in each sector.
 - Participants with projects to promote are encouraged to submit information about their projects and to let the ASG know that they would like this project to be featured in the Expo. **Deadline is 2 July 2007.**

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Slide 8



Expo Planning Update

- Dates and Location:
 - 30 October – 1 November 2007
 - China World Hotel
 - Beijing, China
- Expo Web site (www.methanetomarkets.org/expo/index.htm) includes:
 - Draft Agenda
 - Sponsorship information
 - Templates for submitting projects
- Outreach Efforts and Related Materials
 - Exhibited at Point Carbon's Carbon Markets Insight (13-15 March 2007).
 - Call for projects issued March 9 and expanded Web site launched.
 - Presenting at the United Nations Commission on Sustainable Development (30 April – 11 May 2007).
 - Exhibiting at Carbon Expo (2-4 May 2007).
 - Developing Expo marketing brochure – in both English and Chinese.
 - M2M Expo Web site will also be mirrored in Chinese.

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Slide 11



Year 3 Charge to Subcommittees

- Support the Partnership Expo.
- Contribute to overall Partnership outreach and communications efforts.
- Recruit Project Network members.
- Submit and Review/Update Projects for Tracking System.

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Slide 9



Expo Draft Agenda

- Day 1
 - All day: Exhibits open.
 - Morning Opening Plenary: Welcome and Host Introductions, Keynote Speakers.
 - Afternoon: Begin Sector-specific Policy and Technical Sessions.
 - Evening: Opening Ceremony/Reception in Exhibit Hall.
- Day 2
 - All day: Exhibits open, Sector-specific Policy and Technical Sessions.
 - Steering Committee meets concurrently.
 - **Press Event to announce projects.**
- Day 3
 - Morning Closing Plenary:
 - Report out from Steering Committee on Key Decisions and Charge to Subcommittees.
 - Report out from Sector-specific Sessions.
 - Late Morning into Afternoon: Subcommittee Meetings.

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Slide 12



Charge to Subcommittees: Support Partnership Expo

- Sector-specific policy and technical sessions
 - Issue a "draft final" after Spring Subcommittee meeting to post on Web site.
 - Contribute expertise and/or serve as speakers or moderators.
 - Coordinate with ASG and our Chinese hosts to finalize agenda.
- Project Assistance
 - Complete project opportunity templates on projects to showcase at the Expo.
 - Provide advice and support to improve project templates for selected project opportunities.
- Solicit organizations to purchase booths and sponsorships.

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Slide 13



Charge to Subcommittees (con't)

- **Outreach and Communications Efforts**
 - Contribute information to enhance the Web site.
 - Contribute to the Methane to Markets newsletter to highlight projects, conferences, or other success stories.
 - Participate in outreach events and issue press releases.
 - Provide links to press releases and other news items for ASG to include on the Methane to Markets Web site and MI.
- **Recruit Project Network Members**
- **Track country activities to showcase at Expo**
 - Refined project tracking system will be available soon!

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Slide 15



Continued ASG Structure

- **2 EPA Staff Leading Efforts**
 - Ms. Erin Birgfeld: Coal and Agriculture Subcommittees
 - Mr. Henry Ferland: Landfill and Oil/Gas Subcommittees
 - Shared responsibility for Steering Committee and Partnership Expo Planning
- **ERG Consulting Providing Dedicated Staff to Each Subcommittee**
 - Jeff Clark, Coal Subcommittee

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Slide 14



Online Tracking System

- **Goals**
 - Project Ideas matching with developers.
 - Tracking ongoing Methane to Markets activities.
- **Initial testing of the system revealed a need to simplify the information requested.**
 - A refined system will be available shortly.
 - Will focus on capturing ongoing and completed activities to report.
- **Word form for inputting project ideas available at**
 - www.methanetomarkets.org/projects/submit-ideas.htm.

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Slide 16



For More Information

- **Web site**
 - www.methanetomarkets.org
- **Administrative Support Group**
 - asg@methanetomarkets.org
 - Tel: +1.202.343.9683
 - Fax: +1.202.343.2202
- **Direct Contact information for ASG leads:**
 - Birgfeld.Erin@epa.gov Ferland.Henry@epa.gov
 - Tel: +1-202-343-9079 +1-202-343-9330

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Slide 1

Methane to Markets

Update: Progress of the Coal Task Force on the M2M Partnership Expo

Raymond Pilcher
Raven Ridge Resources
Coal Subcommittee Meeting
Geneva, Switzerland
April 3 – 4, 2007

Slide 4

CMM Project Opportunities Presentation Guidelines

- Presentation guides have been developed to showcase project opportunity information at the Expo.
- Model posters created for display of projects that meet threshold criteria of required information:
 - General information on the host mine and project site
 - Project Design
 - Projected Emissions Reductions
 - Forecast of Economic Performance
- Model prospectus created to distribute with project information

Slide 2

Coal Subcommittee Partnership Expo Task Force

- November 2005 (Buenos Aires, Argentina)
 - Project Expo concept proposed
- May 2006 (Tuscaloosa, AL, USA)
 - Report on Project Expo logistics
- October 2006 (Brisbane, QLD, Australia)
 - Discussion of the Partnership Expo
 - Reviewed draft project opportunity templates
 - Created Task Force
 - Representatives from Australia, China, Japan, USA
- December 2006 (Rome, Italy)
 - Report to Steering Committee on progress of Task Force
- January – March 2007:
 - Revised templates for assessing project opportunities
 - Developed guidelines and example posters for display
 - Developed draft agenda for the Coal Sector technical / policy break-out sessions

Slide 5

Coal Sector Breakout Sessions Draft Agenda

- Session 1. Technology Case Studies
 - Advanced technology applications:
 - Degasification / extraction
 - Utilization of ventilation air methane
- Session 2. CMM Project Case Studies
 - Highlight projects that offer insight into issues encountered during CMM project development
 - Geographical and end-use diversity
- Session 3: Policy and Finance Issues
 - Important policy and finance issues that many projects worldwide share

Slide 3

Project Assessment Templates

- Two CMM templates have been developed to showcase project opportunities:
 - **Preliminary project assessment:** should be used for projects where basic data and information is available indicating that the project has development potential, but pre-feasibility work has not been completed.
 - **Detailed project assessment:** should be used for projects where pre-feasibility work has been performed and conceptual project design is available
- Templates available online at <http://www.methanetomarkets.org/expo/submit.htm>

Slide 6

Coal Expo Task Force: Remaining Activities

- Solicit input from the Coal Subcommittee on the proposed Coal Sector Breakout Agenda
- Receive endorsement and support of the Draft Agenda by Coal Subcommittee
- Identify specific speakers and determine their interest in presenting at the Expo
- Confirm availability of selected speakers
- Finalize agenda, with speakers and presentation titles confirmed by 1 July 2007

Slide 7

Methane to Markets

Ensuring a Successful Expo: *Work Remaining for All of Us*

- Assess and prepare information for quality projects to showcase
 - Submit project opportunity information as early as possible, in as much detail as possible!
 - Only projects that meet threshold criteria of information will be displayed on posters. For projects with less information, brochures / handouts to be prepared.
- Identify and secure Expo sponsors
- Encourage attendance and participation

Slide 1



Methane to Markets Partnership Expo
Updates from China

Dr. Huang Shengchu, President, Professor
China Coal Information Institute &
National Institute for Occupational Safety
Tel: 0086-10-84657818
Email: Huangsc@coalinfo.net.cn

Slide 4



- Attending Coal Subcommittee meetings held in Geneva, Beijing, Alabama in USA, and Brisbane in Australia to discuss the progress of M2M activities in coal sector, work of Coal Subcommittee and reported conditions of projects in coal sector in China.



Slide 2



Introduction

Experience for organizing international conference

- 6 CBM/CMM symposium, several CBM/CMM workshop, other relative work safety, energy and gas control meeting
- China CDM Conference, October 2005, Beijing
 - More than 400 participant
 - 3 sector: coal mine methane, renew energy, energy efficiency
 - About 100 participant, 15 projects, 6 speakers

Slide 5



- The first preparation meeting of M2M Expo (CCII, 2-13-07)



Slide 3



Work has been done

- Setting up task force for M2M Expo in CCII
CBMC work with other staff
- Assisting USEPA working and having meeting in China for Expo
Assist USEPA in translating, printing materials for Expo and propaganda information.
have meeting with other organization in China
- Assisting USEPA discussing with China World Hotel and Exhibition Hall
- Call conference with official of USEPA to discuss details of M2M Expo
- Coordinating with the related department of Chinese government
NDRC, other ministries

Slide 6



- Assisting USEPA to meet with NDRC & MFA to discuss the preparation work of 2007Expo



Slide 7



- Submission of part of projects in coal sector
 - Outlines of 18 CBM Utilization projects (May 2006)
 - CBM surface development project in Hebi Mine area(Oct. 2006)
 - VAM utilization project in Huainan mine area(Oct. 2006)
 - CBM power generation project in Jixi mine area

Slide 8



- Expo organizing unit of China was preliminarily decided
 - Sponsor in China
NDRC
 - Co-Sponsor in China
MFA, SAWS, MOST, MC, MA, CNPC, Sinopec, COO, etc.
 - Organizer in China
CCII

Slide 9



Next Step

- Identify the final name list of members of the Organizing Committee from Chinese party and submit to USEPA
- Complete the official announcement document of attending the Expo for the 4 sectors in China
- Complete announcement of Expo, paper guide, exhibition and accommodations guide, etc and dissemination
- Improvement of Chinese Expo website and enhancement of propaganda
- Sending invitations to foreign parties.
- Coordinate the 4 sectors in China and submit the name list of experts and projects list from Chinese related sector
- Organization of the 4 sectors in China to attend the Expo



Slide 1

**Participation of India
In
Partnership Expo
Present Status**

Slide 4

**Participation of India In Partnership Expo:
Showcasing Projects**

Showcasing Projects at Partnership Expo

- We propose to showcase two CMM conceptual projects related to commercial recovery of CMM from opencast mines:
 - Singrauli coalfield, NCL
 - Korba Coalfield, SECL

Slide 2

Participation of India In Partnership Expo

- India's participation in the Partnership Expo will be in form of:
 - Sponsoring events
 - Showcasing Projects

Slide 5

**Participation of India In Partnership Expo:
Salient features of the Projects**

Moher Sub-Basin of Singrauli Coalfield:

- There are 3 main coal seams in the area having cumulative thickness of 30m. The gas content of coal seams is expected to be 1.5 M³/Tonne at the present depth (125m), which may increase to 4 M³/Tonne with depth (300-600m).
- NCL is operating 8 mechanized opencast mines having capacity varying from 3 MTY to 10 MTY.
- The present coal production is 52 MTY which is expected to increase up to 67.5 MTY during 2011-12.

Korba Coalfield

- There are 7 main coal seams in the area having cumulative thickness of 125 m. The gas content of coal seams varies from 1.72 to 4.44 m³/tonne in depth range of 220-400m
- SECL is operating 3 large opencast mines having a capacity varying from 10MTY to 25 MTY. The present depth of operation is about 100m.
- The current coal production is 57 MTY which is expected to increase up to 75 MT during 2011-12.

Slide 3

**Participation of India In Partnership Expo:
Sponsoring Events**

Sponsoring Events

- Contacts have been made with agencies engaged in CBM/CMM activities and also financial institution to become project network members and also to sponsor certain events of the proposed partnership expo.
- Subject to competent approval, CIL/CMPDI are proposing to sponsor the following events:
 - The event under Gold sponsorship category
 - Opening reception in the exhibit hall
 - One of the continental breakfast

Slide 6

**Participation of India In Partnership Expo:
Showcasing Projects...**

- Both these prospects are currently under examination by CMPDI.
- Template under preliminary assessment category will be submitted by September' 07.

Slide 7

**Participation of India In Partnership Expo:
EOI for Additional CMM Prospects**

- Additional CMM prospects, having prognosticated resource of 150 BCM largely in working and potential underground mining blocks are available in the following coalfields:
 - Jharia
 - Raniganj
 - Bokaro
 - South Karanpua
- These prospects will also be showcased, for which Global Expression of Interest is being invited.

Slide 8

Thank You

Slide 1

Hideo Shindo NEDO DC
 (Tel) +1-202-822-9298
 (E-mail) shindo@nedodc.org

Preparation activities in Japan for Partnership EXPO

1. Outreach to potential participants from Japan

- 28 CMM Project Network Members (21 organizations) in Japan
 (NEDO, JCOAL, Univ. of Tokyo, Hokkaido Univ., Sojitsu, JGC, MHI, IHI, KHI, Toyo Engineering, Toyo Energy, Mitsui Mining Engineering, Mitsui Mining, Taiheiyou Kouhatsu, Mitsubishi Materials, CoalinQ, DIA Consultants, Suncoch Consultants, JBIC, Gas and Power Investments, Marubeni.)
- 22 CDM Stakeholder organizations (Trading Companies, Financing Institutions, etc.)

→ Several companies are interested in participation to the EXPO
 1 trading company has expressed its willingness to sponsor the EXPO
 2 groups are interested in the presentations in the EXPO

03-04 April 2007 M2M Coal Subcommittee 1

Slide 2

2. Update of Technology Database (Japan) : 10 technologies (Feb 2007)

Gas Engine		
TECHNOLOGY	CONTACTS	DESCRIPTION
Gas engine power generation system	Mitsubishi Heavy Industries, Ltd.	World's highest generation efficiency level gas engines. Investigating the application of CMM and VAM.
Gas engine power generation system	Ishikawajima-Harima Heavy Industries Co., Ltd.	High efficiency gas engine for CMM and VAM.
Gas engine power generation system	Mitsui Engineering & Shipbuilding Co., Ltd.	High efficiency gas engine for CMM and VAM.
Power Generation System		
Co-firing boiler for CMM and coal	Ishikawajima-Harima Heavy Industries Co., Ltd.	Co-firing boiler for CMM and coal/low grade coal.
Gas turbine power generation system	Kawasaki Heavy Industries, Ltd.	High efficiency gas turbine for CMM and VAM.
Gas Upgrading		
Gas upgrading system	Gas & Power Investment Co., Ltd.	The unit increasing concentration of methane for CMM and VAM.
Simulation		
Gas simulation software (MGF-3D)	Japan Coal Energy Center	PC based simulation software for emission and recovery of coal mine methane, developed by JCOAL.
Gas simulation software (COSFLOW)	Japan Coal Energy Center	Computer simulation software for emission and recovery of coal mine methane, developed by CSIRO (Australia), JCOAL and NEDO.
Simulation software for underground ventilation and gas (KAZEMARU)	Japan Coal Energy Center	PC based simulation system to analyze mine ventilation network, developed by JCOAL.
Gas Measurement		
Gas contents analyze apparatus	Japan Coal Energy Center	Portable and compact gas analyzing apparatus to measure gas contents in coal on site.

Slide 3

3. NEDO's Travel Support for M2M Coal mtgs

- Dec 2005 Beijing Regional WS 5 experts (Argentina, India, Nigeria, Russia & Ukraine)
- May 2006 Tuscaloosa M2M Coal SC 5 experts (Argentina, China, Mexico, Nigeria & Russia)
- Oct. 2006 Brisbane M2M Coal SC 5 experts (China, India, Nigeria, Russia & Ukraine)
- April 2007 Geneva M2M Coal SC 4 experts (China, Mexico, Nigeria & Ukraine)

→ Country reports and project templates submitted from the experts who received the travel support

4. NEDO's Travel Support for Partnership EXPO

- Now being planned, details will be announced soon
- Support could cover two experts from each developing/transition member country, or cost to develop project templates

Slide 7

INVENTORY OF GHG

- The calculated contribution of methane emissions to the national inventory of greenhouse gases (GHG) is marginal
- Nevertheless, if there is an increase in the mines' present production levels in the near future, or if the number of exploited mines is increased without planned options for the use of recuperated methane, it is possible that the contribution will become moderated in future inventories

Slide 10

LEGAL FRAMEWORK

- Holders of mining concessions for coal exploitation can become partners in order to recover, consume and use CMM
- A signed contract is required, for transportation and delivery of CMM to PEMEX
- The terms for the payment of transportation and delivery services of gas should consider the necessary investments for recovery, transportation, operation and maintenance plus a reasonable profit

Slide 8

METHANE EMISSIONS IN COAL MINING ACTIVITIES

Year	1990	1991	1992	1993	1994	1995	1996
Underground mining	55.8	50.0	44.7	53.1	59.8	59.8	69.0
Surface mining	1.7	2.0	2.0	2.3	2.5	2.9	3.5
Underground Post-mining	3.2	2.8	2.6	2.8	3.6	3.6	3.9
Total	60.6	54.8	49.4	58.3	65.9	66.3	76.4
Year	1997	1998	1999	2000	2001	2002	2003
Underground mining	63.1	62.7	66.2	74.5	63.0	59.5	58.2
Surface mining	3.3	3.0	3.4	3.2	2.8	2.5	2.6
Underground Post-mining	3.9	4.2	4.2	4.6	4.6	4.4	3.9
Total	70.2	69.9	73.8	82.3	70.4	66.4	64.8

(Gg OF METHANE)

Slide 11

LEGAL FRAMEWORK

Holders of mining concessions are required to:

- Report the start and suspension of their activities
- Collect, register and provide geological data periodically regarding the recovery and use of CMM
- Notify the discovery of non-associated gas to the coal mineral deposits
- Deliver the CMM in the connection point indicated by PEMEX, in case of non-self consumption.

Slide 9

LEGAL FRAMEWORK

- The amendments to the Mining Law of June 26, 2006 published in Mexico's Official Newspaper, allow holders of coal mineral concessions to recover and use methane in order to stop methane venting from coal mining to the atmosphere
- Use of methane by coal miners can occur in two ways:

For self consumption and/or for PEMEX delivery

Slide 12

CONCLUSIONS

- Methane is a considerable problem for mining due to its toxicity and explosion hazard, while being a low cost energy source.
- It can be used as an energy resource to bring extra wealth to certain regions of Mexico.
- CMM recovery and use is considered an emerging market in Mexico.
- Some kind of support may be required to implement companies' projects

Slide 13

CONCLUSIONS



- Mexico has not developed any project on this matter but has conducted methane drainage and ventilation at active coal mines
- Lack of information and the difficulty of communicating coal mine companies constitute important barriers
- There is no question that Mexican participation in the Methane to Markets Partnership will provide domestic coal companies with the information to identify developers and/or financiers for the recovery and use of methane to generate electricity



Slide 1

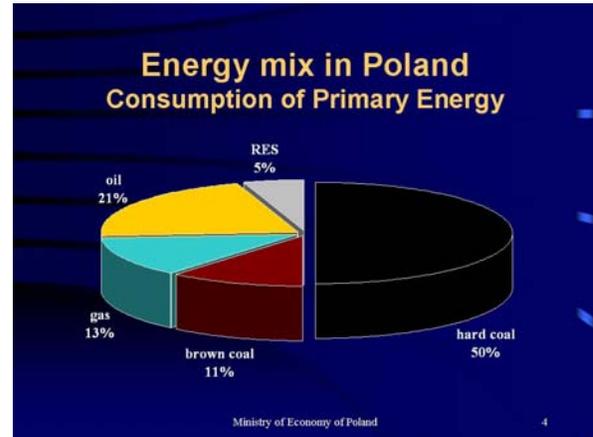
Poland in the Methane to Markets Partnership

Jacek Skiba

Central Mining Institute of Katowice, Poland

Geneve, April 3rd 2007

Slide 4



Slide 2

Poland is interested in active participation in the Partnership in the following areas:

- Coal Mines
- Oil and Gas Systems
- Landfills
- Agriculture

Ministry of Economy of Poland

Slide 5

Coal mines

33 coal mines in operation, among them:

- 29 methane coal mines
- 21 have degasification installations of methane
- 14 utilize methane

Ministry of Economy of Poland

Slide 3

Responsibilities covering issues of capturing and reusing of methane are divided between:

- Ministry of Economy (coal mines, oil and gas systems)
- Ministry of Environment (landfills)
- Ministry of Agriculture and Rural Development (agriculture)

Ministry of Economy of Poland

Slide 6

Coal mines (2)

Methane from coal mines is used in small scale units for:

- CHP
- electricity generation
- heat generation

Ministry of Economy of Poland

Slide 7

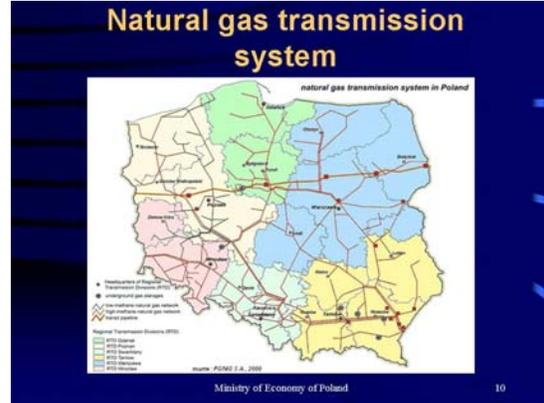
Annual methane's capturing from coal mines

Total amount of 829 mln m³ methane is released, this includes:

- 578 mln m³ methane through ventilation systems
- 251 mln m³ methane through degasification systems, which cover:
 - 106 mln m³ methane is released to atmosphere
 - 145 mln m³ methane is utilized

Ministry of Economy of Poland 7

Slide 10



Slide 8

Oil and Gas Systems

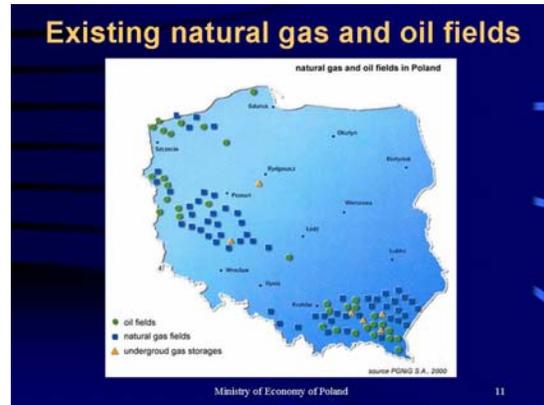
Methane from oil and natural gas systems can be cost-effectively reduced by upgrading technologies or equipment, and by improving management practices and operations

Poland consumed in 2005:

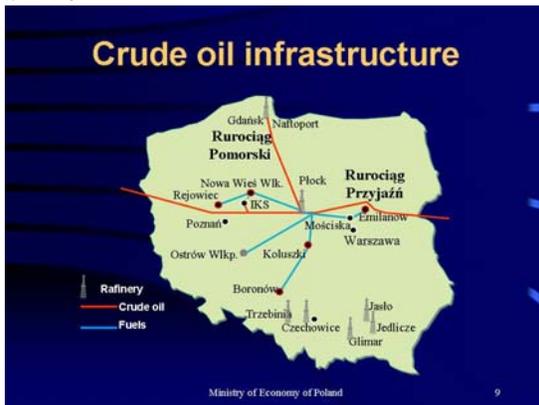
- 21,3 mln tons of crude oil
- 14,4 bln m³ of natural gas

Ministry of Economy of Poland 8

Slide 11



Slide 9



Slide 12

Landfills

There are app. 1049 landfills among them:

207 with degasification systems:

- 168 release methane to atmosphere
- 41 make methane harmless
 - 27 electricity generation
 - 5 heat generation
 - 9 firing in burners

Ministry of Economy of Poland 12

Slide 13

Agriculture

Poland as a big producer of agricultural goods has huge potential in recovery of methane.
It could be generated from:

- wastes (manure and other organic wastes)
- animals

It is a great challenge for recovery of methane.

Ministry of Economy of Poland 13

Slide 16

Support scheme for using methane

For methane from coal mines:

- new support for CHP units through „red certificates” mechanism
- excise tax exemption for electricity generation

Ministry of Economy of Poland 16

Slide 14

Electricity generation from biogas

Electricity generation [GWh]	2002	2003	2004	2005
Total	48	56	83	109
Landfill gas	48	45	64	73
Agricultural biogas	-	9	1	1
Biogas from municipal sewage plants	-	2	18	35

Ministry of Economy of Poland 14

Slide 17

Support scheme for using methane (2)

For methane from agriculture and landfills as renewables:

- „green certificates” mechanism
- excise tax exemption for electricity generation

Ministry of Economy of Poland 17

Slide 15

Installed capacity

Installed capacity [MW]	2002	2003	2004	2005
Total	15,0	18,0	25,6	34,5
Landfill gas	15,0	15,0	17,8	23,7
Agricultural biogas	-	1,0	2,0	2,0
Biogas from municipal sewage plants	-	2,0	5,8	8,8

Ministry of Economy of Poland 15

Slide 18

Additional financial support

- Support from the National Fund for Environmental Protection and Water Management and provincial, district and local funds
- ECOFUND supporting environmental projects
- EU Funds

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Thank you for your attention

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Methane to Markets

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For more information,
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www.epa.gov/coalbed



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USEPA Project Development Support

- Plan to support up to 15 CMM project opportunities for showcasing at the M2M Partnership Expo in Beijing
- Project development assistance to several countries for data collection, analyses, brochures & posters
- Encourage project submittal through the Expo Portal



Slide 2



United States Country Update

*Methane to Markets Partnership
Coal Subcommittee Meeting
Geneva, Switzerland
April 3 – 4, 2007*

*Jayne Somers, Ph.D., P.E.
United States Environmental Protection Agency
Climate Change Division*



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United States Booth at Expo

- Country booth will showcase US government support for all four M2M sectors
- Agencies represented will include:
 - US Environmental Protection Agency (EPA)
 - US Department of Energy (DOE)
 - US Agency for International Development (AID)
 - US Trade and Development Agency (TDA)
 - US Department of State



Slide 3

United States Support for Expo

- US EPA is directly funding and organizing the Expo through the ASG
- US government is sending a large multi-sector, multi-agency delegation to Beijing
- US EPA will provide travel support to select coal sector experts to attend the Expo
- US EPA plans to provide project development support
- US is actively encouraging participation and sponsorship by the M2M Project Network
- United States booth: all sectors



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M2M Project Network

- US outreach for Project Network participation and Expo sponsorship
 - Advertisement on websites and in newsletters
 - Point Carbon Expo in Copenhagen March 2007
 - Promoting and recruiting Network members



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U.S. Government Agencies

- Asia Pacific Partnership (APP) for Clean Development and Climate
 - Coal Mining Task Force is considering support for CMM projects
- US AID launched India CMM project
- US EPA supports Clearinghouses in China & India
- US Trade & Development Agency
 - Nearing completion of CMM / CBM project in Ukraine
 - Support for CMM Project in China (Jincheng, Sihe mine)



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US Coal Mine Methane Workshop

- September 25 – 27, 2007 St. Louis, Missouri
- Sponsored by US EPA
- Open to all international guests
- Focus on technical and policy issues relevant to coal mine methane recovery & utilization
- More details to be posted soon at:
www.epa.gov/coalbed



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Coal Mine Methane (CMM) Methane to Markets Grants

- US EPA will award \$2.5 million to projects in four sectors: coal, landfills, oil and gas, and agriculture
- Over 100 good-quality applications received
- Proposals under technical review – notifications will be sent out soon

