



## GLOBAL METHANE INITIATIVE COAL SUBCOMMITTEE MEETING

16<sup>th</sup> Session of the Coal Subcommittee  
5 September 2012  
InterContinental Hotel  
Sydney, Australia

### FINAL MINUTES

#### **Coal Mining Methane Abatement Seminar: 4-6 September 2012**

The Australian Government's Department of Resources, Energy and Tourism (RET) and the Global Methane Initiative (GMI) hosted the Coal Mining Methane Abatement Seminar on 4-6 September 2012. The GMI Coal Subcommittee meeting was held in conjunction with this meeting on 5 September 2012. The seminar was intended to connect the Australia coal industry with domestic and international coal mine methane (CMM) abatement technology providers, provide greater information for the Australian industry on future international investment opportunities, and promote Australia's expertise and technologies relevant to CMM recovery and use. Australia recently released its Coal Mining Abatement Technology Support Package (CMATSP)—a \$70 million set aside to invest in technologies and research and development—focused on reducing fugitive methane emissions from coal mining. Part of the seminar's focus was to determine how to allocate these funds.

Wayne Calder with Australia's RET welcomed participants and introduced Drew Clarke, the Secretary of RET, who provided opening remarks. Following the opening remarks, four technical sessions were held on the first day of the seminar, and two additional technical sessions were held on the morning of the second day.

Each session featured a different panel of speakers from multiple countries and backgrounds. Topics included:

- Policy drivers and international actions (Session 1)
- Avoiding methane emissions in ventilation air (Session 2)
- Progress on developing ventilation air methane (VAM) technologies (Session 3)
- Waste coal mine gas power station project experience (Session 4)
- Health, safety, and regulatory requirements and processes (Session 5)
- Measuring and monitoring emissions (Session 6)

A closing session followed the six sessions, featuring a moderator and a panel comprised of the moderators from the six technical sessions. The panelists gave remarks summarizing and commenting on the seminar. Finally, Mr. Calder provided closing remarks and adjourned the seminar. The GMI Coal Subcommittee meeting immediately followed.

On 6 September, seminar participants attended a site tour of the Appin Waste Coal Mine Gas (WCMG) power station and the West Cliff Ventilation Air Methane Project (WestVAMP).

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### GMI Coal Subcommittee Meeting: 5 September 2012

The GMI Coal Subcommittee held its 16<sup>th</sup> session on 5 September 2012 in Sydney, Australia, on the second day of the Coal Mining Methane Abatement Seminar. Attendees discussed updates from the Administrative Support Group (ASG), including country-specific Action Plans, Methane Expo 2013, coordination with the Climate and Clean Air Coalition (CCAC) to Reduce Short-Lived Climate Pollutants (SLCPs), and how to join the Project Network. A representative from the U.S. Department of State further discussed the CCAC to Reduce SLCPs. Representatives from Partner countries and the Project Network shared updates relating to CMM activities. The subcommittee also discussed plans for the coal mines sector technical and policy sessions for Methane Expo 2013.

The following sections provide more details of the meeting discussions.

#### **Opening Remarks and Introduction**

The Coal Subcommittee meeting was attended by GMI Partner Country delegates, Project Network members, and ASG staff. Forty-two people, representing six countries, were present. A list of attendees is included as Annex 1 to these minutes. The meeting opened at 2:00 p.m. local Sydney time.

Presiding over the meeting was:

- Co-chair Ms. Felicia Ruiz, international program leader of U.S. Environmental Protection Agency's (U.S. EPA's) Coalbed Methane Outreach Program (CMOP).
- Acting Co-chair Mr. Sun Qinggang, Deputy Director of the Energy and Safety Division of the China Coal Information Institute (CCII).

Ms. Ruiz opened the meeting by welcoming everyone and thanking the Australian government for hosting the Coal Methane Mining Abatement Seminar and this subcommittee meeting. She commented on the impressive turn out and knowledge sharing. She noted the Co-chair from India could not attend due to unforeseen complications, but the Indian colleagues send their wishes for a productive meeting. She then invited Acting Co-chair, Mr. Sun, to give opening remarks. He explained the agenda included important topics, such as an update from the ASG, Partner Countries, and Project Network members as well as discussion of the coal sector's plans for the upcoming Methane Expo 2013. He thanked participants, indicating the meeting should be fruitful and will further promote the GMI coal sector.

Introductions of Country delegates, Project Network members, and other attendees followed. Ms. Ruiz then presented the agenda, which was approved by Mr. Sun. A copy of the final agenda is included as Annex 2 of these minutes.

Before moving on in the agenda, Ms. Ruiz informed the group there were copies of the CMM Technology Database circulating the room. The database—originally prepared by Australia and updated by the United States last year—includes a list of technology and service providers in the CMM industry. It is meant to be a living document, updated with recent contact information and project information. She asked participants to review it and make edits in hard copy or send them to her to update after the meeting.

#### **Update from the Administrative Support Group**

Ms. Monica Shimamura, with U.S. EPA, introduced herself as the ASG Co-Director and provided an [update on the ASG's activities](#) since the 16 May 2011 Coal Subcommittee meeting held via webinar and teleconference. Highlights of the ASG update comprise:

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- There are 41 Partner countries and 1,000 Project Network members to date and membership continues to expand.
  - GMI is a successful multi-lateral partnership because of the synergy between government and the private sector.
  - The Project Network is a community of private-sector entities, financial institutions, and non-governmental organizations with an interest in methane abatement, capture and use projects.
  - Joining the Project Network can help members expand business and increase profits, distinguish themselves in the marketplace, identify financial and technical support for potential projects, submit project ideas and activities, and gain information from cutting-edge news.
  - To join the Project Network, interested members fill out a non-binding agreement form. For more information, visit the GMI website, at: <http://globalmethane.org/project-network/index.aspx>.
- At the October 2011 meeting in Krakow, Poland, the GMI Steering Committee provided several charges to the subcommittees.
  - The subcommittees should provide information to the GMI website and *Methane International* newsletter, particularly information about sector-specific resources and project successes.
  - Countries should complete their country-specific methane Action Plans and sector-specific methane Action Plans by Methane Expo 2013 in Canada. Guidance is available on the GMI website. The country Action Plans are the entire country's roadmap to reducing methane emissions and should include plans for all sectors. Sector-specific Action Plans include more details on how methane emissions will be reduced by sector.
  - Each subcommittee should also create a subcommittee Action Plan, which combines the sector-specific initiatives from active Partner Countries.
  - Each subcommittee should develop the agenda for technical and policy sessions during Methane Expo.
- Partnership-wide, there are new activities going on in GMI.
  - The Landfill Subcommittee is now the Municipal Solid Waste Subcommittee, and it is developing a statement of purpose.
  - The Agriculture Subcommittee also adopted a statement of purpose.
  - The Municipal Wastewater Subcommittee is now official and it held its first in-person meeting in Singapore in July 2012.
- GMI will hold Methane Expo 2013 in Vancouver, Canada, from 12-15 March 2013.
  - Environment Canada will be hosting this Expo.
  - The Expo provides participants the opportunity to: showcase methane mitigation projects and opportunities; learn about the latest project opportunities, technologies, and services; meet with potential project partners and financiers; explore key technical, financial, and policy issues; and interact with high-level government agencies from 41 countries.
  - There will be one day of site visits and three days of general and sector-specific technical and policy sessions. There will also be an exhibition hall with project opportunity and success story posters displayed. All subcommittees will meet.
  - There will be a finance panel for the plenary session on the second day of the Expo.
  - There may be other side events held in conjunction with the Expo.
  - The ASG put out a call for abstracts/speakers for the technical tracks and this solicitation has been extended.

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- In July, the ASG put out a call for project opportunity posters, success stories, demonstration projects, and more.
  - The ASG is requesting Partner Country delegates and Project Network members publicize the Methane Expo 2013 by downloading the Expo flyer (<http://www.globalmethane.org/expo/outreach.html>) to put on their websites and in newsletters.
- GMI is supporting the newly launched CCAC to Reduce SLCPs initiative.

### Update on the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants

Ms. Ruiz introduced John Habjan from the U.S. Department of State, who works for the U.S. Embassy in Canberra, Australia. Mr. Habjan was invited to discuss the CCAC initiative and its objectives.

Methane, black carbon, and hydrofluorocarbons (HFCs) are significant climate forcers that account for 30 to 40 percent of current global warming. To address these SLCPs, CCAC was founded in February 2012 (with its secretariat housed at the United Nations) and is still expanding. It now has 19 partners and is looking for more. It currently focuses on five initiatives, two of which pertain to methane: oil and gas and municipal solid waste. Those sources were chosen because of the significant amount of methane emissions and global applicability. There is also high interest in black carbon, including diesel emissions and brick kilns.

There isn't a significant budget for CCAC, but the World Bank is looking at how to finance projects down the road. The structure of CCAC will be similar to GMI—identifying best practices, barriers and impediments to projects, and pragmatic ways to avoid the short-term effects of global warming while working on long-term solutions. CCAC is actively recruiting governments and private sector members, and hope to have regional events to identify priorities in developing countries. They have already established a scientific advisory panel in summer 2012, to look at best practices. Mr. Habjan closed the discussion by emphasizing the CCAC is trying to provide a narrative on why projects are important (to prevent climate change) and to link issues that are important to people with GHG reduction projects. He noted again that co-benefits are an important CCAC focus.

### Coal Mines Sector Plans for Methane Expo 2013 in Vancouver, Canada

Ms. Ruiz opened the floor for Ray Pilcher (Raven Ridge Resources) to provide a history of previous Expos, a summary of potential presentations from abstracts submitted for Methane Expo 2013, and a discussion of the gaps identified to date in the coal agenda. [Mr. Pilcher's presentation](#) can be found on the GMI website.

To develop the coal sector agenda for Methane Expo 2013, Mr. Pilcher had volunteered during the October 2011 Coal Subcommittee meeting in Krakow, Poland, to head up a committee of experts to prepare the coal sector agenda for the Vancouver meeting. The committee—comprised of Clark Talkington, David Creedy, Hua Guo, and Michael Coté—will recommend and encourage potential speakers to submit abstracts, review the abstracts to fill out the agenda, and chair session or nominate others to chair sessions.

The committee recommended the coal technical and policy sessions be broken into four main topics:

- Policy: Enabling greater use of CMM and VAM
- Best practices: Ensuring safe and effective capture of CMM and VAM
- Technology: Encouraging innovation and adaption of technology for cost-effective use of CMM and VAM

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- Financing: Identifying carbon markets, incentives, and funding sources

Although the deadline to submit abstracts has passed, abstracts will still be accepted, for a limited time. Potential topics include:

- Conventional methane drainage techniques and end-use markets
- New and innovative methane recovery technologies
- Capture and use of methane from abandoned mines
- Country-specific profiles and the global market
- Financing methane mitigation projects
- Policies and regulatory frameworks for supporting methane mitigation project development
- Project case studies
- Methane abatement

Mr. Pilcher explained a key Expo goal for the poster area to be very robust, featuring a range of projects from those that are just new ideas, to those that have undergone a feasibility study, all the way up to those that are currently operating (i.e., success stories). He noted that featuring successful projects is important to helping others get off the ground. The overall goal is to connect people so projects become better known (i.e., people may not be aware), financiers find projects, and technology vendors and consultants can have an opportunity to meet. The Project Network should find these new ideas and encourage attendance.

The posters describe the project, estimated or actual emission reductions, a market analysis, and a discussion of what the opportunities may be (details can be found on the GMI website). They feature pictures. There are some examples of past posters on the GMI website. He reiterated the committee would like project success stories not just opportunity stories.

Mr. Pilcher noted that presentations will be in the 20 minute range, and panels may be longer.

Ms. Ruiz reiterated that although the deadline has passed, contact information for potential speakers can still be submitted. GMI wants to identify more speakers for all four sessions and gather ideas for any topics that may be missing. Ms. Ruiz added that GMI is looking at the country-level for posters that are potential project opportunities to showcase at the Expo. She noted the ultimate Expo goal is project implementation—paring people working on potential projects with the assistance they need. Success stories are also important. She emphasized the importance of having a representative in attendance at the Expo to discuss the poster. Ms. Shimamura further emphasized the Expo will be even more successful with more participants. Mr. Pilcher emphasized the desire for a strong international presence.

### Partner Country and Project Network Updates

Following the discussion of Methane Expo 2013, country representatives and Project Network members were asked to provide the subcommittee with updates on their countries' CMM activities since the last subcommittee meeting. Presentations submitted by country representatives and Project Network members can be found on the GMI website, at: [http://www.globalmethane.org/news-events/event\\_detailsByEventId.aspx?eventId=386](http://www.globalmethane.org/news-events/event_detailsByEventId.aspx?eventId=386). Brief summaries of each update are provided below.

#### *Australia*

Mr. Bruce Murphy (RET) provided Australia's country update. He started by thanking everyone for attending the seminar and noted there were a lot of international experts at the meeting, which made it a success. He stated coal is still very important to Australia—that much has not changed recently. 280 million tons of coal per year are produced, which offers \$47 billion to the national economy. That amount is expected to increase to 490 tons of coal by 2016 or 2017. This expansion may lead to more fugitive

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emissions, although fugitive emissions decreased by 35 percent between 1990 and 2010 due to the development of waste-fired gas power stations. Those in Queensland and New South Wales have 215 megawatts of combined capacity.

Australia's Clean Energy Futures Plan went into effect on 1 July 2012 to incentivize investments in methane abatement technologies, with the goal of reducing GHG emissions by 80 percent of 2000 emissions levels by 2050. Included in the plan are two packages for the coal mine industry: a Coal Sector Jobs Package and a Coal Mining Abatement Technology Support Package. The jobs package will offer \$1.2 billion over six years in transitional assistance to the most emission-intensive mines. The coal mining abatement technology package will offer \$70 million over five years to support industry efforts to develop technologies to safely reduce fugitive methane emissions. The package offers assistance to the most gassy mines and supports efforts to develop abatement technologies for full-scale deployment. The program is now open to expressions of interest; information is included on the RET website and on the USBs provided as part of the seminar.

The Futures plan will link to international carbon permit trading. Last week, it was announced the Australia trading and European Union trading will be linked. In 2015, Australian companies can directly support abatement in other countries; 12 percent of domestic liabilities can be offset from international projects under the Kyoto protocol. Australia plans to use GMI to facilitate linkages which will benefit all parties.

### *China*

Mr. Sun Qinggang (CCII) provided [China's country update](#) on new development of coalbed methane (CBM)/CMM projects and policies in China. He started by noting the important events taking place in China recently. The Prime Minister attended the National Coal Mine Gas Prevention meeting in November 2011. The meeting agreed to increase the CMM drainage scale, increase local gas utilization, encourage CMM utilization for industrial fuel, increase the financial subsidy of CBM development, reduce gas coal mine tax, and encourage low concentration gas and ventilation air methane (VAM) utilization.

In December 2011, the 11<sup>th</sup> International Symposium on CBM/CMM was held in Beijing. Over 100 participants from coal mining groups, governmental organizations, universities, international organizations, and more attended. The Symposium discussed China's CBM/CMM project development prospects, investment opportunities, drainage and utilization technology, and VAM utilization. In August 2012, the China Coalbed Methane Technology Workshop was held in Sichuan Province.

Two VAM projects were recently completed in China: one within the Shanxi coal group and another in Henan province. The Shanxi coal group project constructed a VAM power generation plant, which was completed and put into operation in July. The unit, which cost \$86 million Yuan, has an installed generator capacity of 4.5 megawatts and uses low concentration drainage gas mixed with VAM. Methane reduction potential will be more than 400,000 tons per year. The Henan province project was a study focused on the technology, techniques, and implementation plan required for low quality CMM and VAM utilization. The study designed a set of plans outlining the transportation and utilization of low quality CMM, which would help to gain economic benefits from the project.

In addition to the success of the two projects discussed already, in the first half of 2012, China achieved success in CBM/CMM recovery and utilization nationwide. In the first half of 2012, the drainage and utilization volume of CMM amounted to 5.1 billion cubic meters (m<sup>3</sup>) and 1.6 billion m<sup>3</sup>, which increased 0.86 billion m<sup>3</sup> and 0.3 billion m<sup>3</sup> compared with the first half of 2011. The utilization rate was 79.5 percent, which increased 7.1 percent compared with those in the first half of 2011.



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By 2015, the drainage volume of CBM will be 16 billion m<sup>3</sup>, and almost all will be utilized; drainage volume of CMM will be 14 Billion m<sup>3</sup>, and utilization rate will be more than 60 percent. Installed capacity of generator units will surpass 2,850 megawatts, and civil use will surpass 3.2 million households. Also by the end of 2015, under China's 12<sup>th</sup> fifth year plan, the following activities are anticipated:

- Newly-found proven reserves of CBM will be 1 trillion m<sup>3</sup>.
- Two industrialization bases of CBM located in Qinshui Basin and Eastern Ordos Basin will be built up.
- Thirteen CBM pipelines with total length of 2,054 kilometers will be built up in Qinshui Basin, Eastern Ordos Basin, and Northern Henan Province, and the transportation capacity will be 12 billion m<sup>3</sup>.
- China plans to increase the financial subsidy level of CBM/CMM drainage and utilization, and plans to study and draft preferential policy on low concentration CMM and VAM utilization.

Lastly, Mr. Sun invited all the subcommittee members to the 12<sup>th</sup> International Symposium on CBM/CMM, which will be held on 15-16 November 2012 in Beijing. It is a two-day symposium that will provide participants the opportunity to communicate the latest theoretical and technological advances on CMM control and recovery and meet with potential project partners and financiers. They are currently calling for papers and all are welcome to submit a paper and/or attend.

### *India*

Dr. Jayne Somers (U.S. EPA's CMOP) provided the [update on India](#)'s behalf, since Mr. Chopra and Mr. Prasad were not able to attend the meeting. Ms. Somers works closely with India through her CMOP international activities, and noted coal is used for electricity generation and industrial processes.

Eighty percent of India's mines are surface mines and 13 percent are underground mines, with an increasing emphasis on underground mining. Existing mines are currently being expanded and seven new coal mines are opening. The goal is to double underground coal production by 2020, which is ambitious.

India has internal climate goals and is looking to reduce GHG emissions from the coal sector. Clean sources of energy, like natural gas, are also being explored.

As a result of a policy initiative, India auctioned off 33 CBM blocks in four rounds, with several foreign companies bidding on the blocks. CBM is also being produced from the virgin seams, but it is only yielding about 0.2 m<sup>3</sup> per day. India hopes this will increase in future years.

India is hoping to take knowledge from CBM and apply it to CMM since many of the techniques and technologies are similar. In 2008, U.S. EPA worked with the Indian government to establish a CBM/CMM information clearinghouse, which serves as a central repository for investors or project developers for data on coal mine operations. In 2008, the government enterprise provided funds to establish a facility with mapping capabilities and a gas analysis lab. Several samples have been analyzed and the facility has been great for capacity building.

There is one CMM demonstration project funded under the United Nations Development Program (UNDP) Global Environment Fund, which is producing gas for engines and generating power for a local community. It has been a slow process and a steep learning curve to implement the first project. As a result of the desire to capture this gas, India put out a tender for five blocks for CMM. Many coal fields are owned by a state-owned enterprise and private companies account for only 10 percent of ownership. It should be noted that government-owned blocked are sometimes hard to tender.

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### *Mongolia*

Dr. Ochirsukh Badarch (Mongolian Nature and Environment Consortium [MNEC]) provided [Mongolia's country update](#), indicating Mongolia has vast coal resources, estimated at approximately 160 billion tons. Most mines are suitable for open cast mining, and 30 coal deposits are under operation. In 2011, coal production was 32.9 million tons, with 22.5 million tons of exports.

Coal production, consumption, and export—as well as methane leakage—continues to increase in Mongolia. There are also many problems and barriers for CMM development in Mongolia, including the lack of: experienced companies to manage the work technology and technical knowledge, financing, clear legal and regulatory issues, and pilot-project demonstrations.

In 2007 and 2008, Mongolia conducted a pre-feasibility study on the possibilities of methane recovery and utilization in the Nalaikh mine. The results were positive, and the Korean Gas Company is funding drilling in that mine area and implementing the first CMM project in Mongolia.

In addition, there was a 2010 capacity building workshop held in Mongolia to discuss CMM resources and barriers to project implementation. Also in 2010, Mongolia received a grant to conduct a CMM resource assessment and emissions inventory at five mining areas. With the help of Raven Ridge Resources, Mongolia is collecting and analyzing field samples. This inventory work will continue in 2012 and 2013.

In 2013 and 2014, Mongolia will: continue estimating resources and methane emissions and expand on the inventory by region, create legal frameworks that ensure incentives to CMM development, attract foreign investment in this field, build capacity, and complete a pre-feasibility assessment at one mine site.

### *Poland*

Mr. Jacek Skiba (Central Mining Institute [CMI]) provided [Poland's country update](#). Poland is the largest hard coal producer in Europe, producing 75 million tons of hard coal per year (although Poland does import some coal to support its increasing needs). The main coal region in Poland is the Upper Silesian coal basin. More than 90 percent of Poland's electricity is produced by coal, while the rest of the European Union only gets about 29 percent of electricity from coal. Therefore, Poland is considered energy independent compared to most of the European Union.

Methane produced during mine operation amounts to approximately 800 million m<sup>3</sup> per year. Thirty percent of this methane is captured using drainage systems and the remaining 70 percent is vented as VAM. Mines, however, are becoming increasingly gassy and it is estimated methane emissions will be higher than 1 billion m<sup>3</sup> per year by 2014.

The Ministry of Economy is focused on increasing methane capture and its efficient utilization in Polish hard coal mines, and changes to the economic incentives offered have been recommended to improve the situation. Poland's support system gives preferential treatment to energy produced from CMM, but only for high cogeneration. This option is only effective part of the year (i.e., winter) because there is nothing to do with the heat in the summer. Recommendations have been made to provide incentives without requiring cogeneration, so incentives can be received for producing electricity from CMM. The government may also consider establishing a new support system for the development and utilization of VAM. There are several issues in Poland that need to be overcome so VAM can be utilized, and a support system would be beneficial.



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Polish scientists are working to develop their own vocsidizer. A pilot project has been constructed and tested at one mine. There is still progress to be made and since VAM reductions are a strong part of national plans, Poland will need incentives to stimulate these activities.

Poland also has a shale gas exploration plan. More than 100 wells have been drilled and this will impact CBM opportunities. Some fracturing techniques could be used for CBM extraction. Drilling from the surface for pre-drainage ahead of mining will be a focus. Dart Energy drilled the first directional CBM well, and a production test started in August 2012. If the test is successful, this may stimulate drilling for more wells.

The Ministry of Economy is willing to spend some money to drill three pilot wells to verify if drainage ahead of mining from the surface using directional wells could be effective. The drilling will happen a couple of years before drainage. This could offer a huge source of CBM energy to use. Experience so far shows that gas engines running on drainage gas could produce heat and electricity to fulfill the coal mines' demands. Since the mines wouldn't have to buy electricity from the grid, it would decrease the fixed cost and improve the cost effectiveness.

### *United States*

Dr. Jayne Somers (U.S. EPA CMOP) provided the [U.S. country update](#), including an update on the U.S. domestic strategy to reduce CMM emissions and international activities supported by the U.S. EPA through GMI.

Domestically, the United States is updating its country-specific coal sector Action Plan, which will be available soon for dissemination. U.S. underground coal mines have begun reporting their GHG emissions for 2011 to the U.S. EPA, and those data are due by 28 September 2012. In addition, CMOP is preparing for the 2012 U.S. CMM Conference, which will be held in Las, Vegas, Nevada, on 24 September 2012, in conjunction with MINExpo, a large mining event held once every four years.

Under GMI, U.S. EPA has been supporting a number of GMI activities, including updating the Coal Subcommittee's Action Plan and planning the technical and policy sessions for Methane Expo 2013. In addition, U.S. EPA is also supporting the following activities:

- *China.* Since China is the largest coal producer and methane emitter. U.S. EPA has conducted five full-scale project feasibility assessments in China. Given the full-scale feasibility study results at Songzao Coal Mines in Chongqing Province, CQEIG is moving forward with a joint venture for a CMM to liquefied natural gas (LNG) plant.
- *India.* U.S. EPA visited the CMM Clearinghouse, Central Institute of Mining and Fuel Research (CIMRF) grantee, and Moondih mine in February 2012. Moondih mine is the gassiest underground long wall mine in India and the results of its grant will be published in the upcoming year. U.S. EPA has been supporting the CBM/CMM Clearinghouse and development of CBM/CMM policies to clarify ownership and legal issues.
- *Kazakhstan.* A pre-feasibility study is underway in the Karaganda Coal Basin.
- *Mongolia.* U.S. EPA awarded a GMI grant to the MNEC to inventory CMM emissions and a pre-feasibility study has also been launched.
- *Poland.* There is an ongoing grant with CMI to study degasification in Pawlowice. A CMI grant was completed on VAM emissions at 10 gassy coal mines in Poland, and it will be published in 2013.
- *Russia.* Uglemetan received a GMI grant to improve measurement of VAM emissions in the Kuzbass, and a new pre-feasibility study was launched.
- *Turkey.* Virginia Tech and TKI have an ongoing U.S. EPA grant.

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- *Ukraine.* A pre-feasibility study at one mine is being finalized and a second is underway.
- *Vietnam.* U.S. EPA will conduct a CMM workshop and meetings with Vinacomin and IMSAT in October 2012.

In addition to the CMM-related work supported by U.S. EPA, there are ongoing efforts by the U.S. Department of State (funds many U.S. EPA activities); U.S. Trade and Development Agency; U.S. Department of Energy; and the Overseas Private Investment Corporation (financing U.S. entities to invest in renewable and clean energy projects, including CMM).

### **MEGTEC**

Richard Mattus (MEGTEC Systems) provided an [update on MEGTEC's activities](#). The site visit for the seminar will be to Australia's WestVAMP at BHP Billiton, which uses MEGTEC Vocsidizers and has been in operation for 5.5 years—the oldest VAM processing installation in the world. It has achieved more than 1 million carbon credits and produced more than 165,000 megawatts of electricity.

The world's largest VAM abatement plant has been in operation since mid-2011 in China's Chongqing Province; it uses six Vocsidizers and produces hot water for the community.

MEGTEC is also working on a project that resulted from a Songzao feasibility study. It will use one regenerative thermal oxidizer (RTO) and one regenerative catalytic oxidizer (RCO), and be the first commercial deployment of this catalytic technology. Project completion is expected in late 2012.

MEGTEC has worked on several demonstration projects, including Australia's Appin Colliery, which is now pilot-scale and has been generating steam from VAM for 12 months. At Consol Energy, a closed U.S. mine, a demonstration project was developed to inject high concentration methane into fresh air to simulate VAM at different concentrations to test different operating modes and operations. The demonstration at British Coal produced 800 m<sup>3</sup> per hour.

For large plants, conversion from thermal to electrical energy can be expected to be around 30 percent, although lower for smaller plants. MEGTEC is also exploring other types of VAM energy recovery and utilization.

***United Nations Economic Commission for Europe Ad Hoc Group of Experts on Coal Mine Methane***  
United Nations Economic Commission for Europe (UNECE) Ad Hoc Group of Experts on CMM, a Project Network member, is a voluntary group aimed at reducing methane emissions, creating safer environments for miners, and preventing methane explosion-related accidents.

UNECE produced a best practices guide for effective methane drainage, and they have been working to disseminate those practices. They released the guide during the last Expo in India, and then undertook three workshops in China, Ukraine, and Kazakhstan. During the workshops, experts work directly with coal mining groups to identify and create solutions to issues with mine safety, CMM, gas drainage, and other topics. The three workshops were successful to varying degrees, depending on the level of success in engaging directly with coal mines (i.e., when coal mines are fully engaged, the model works). UNECE is looking to conduct more workshops, and is hoping to finance a project in at least one coal mine. UNECE is meeting in November 2012 with the United Nations Framework Convention on Climate Change (UNFCCC) to summarize where they are and what they are doing.

### **Action Items and Adjournment**

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Ms. Ruiz reminded the group the CMM Technology Database is being passed around to collect new information. The document will be updated before Methane Expo 2013 and distributed for update again.

Ms. Ruiz also reminded the group about the International CMM Projects Database (<http://www2.ergweb.com/cmm/index.aspx>), which stores information about any CMM project—whether an idea, planned, or operating—worldwide. There are more than 300 projects in the database, many from China. She reminded the group if they are working on a project and the information is public—whether it is in the design, contract, or operation stage—the project can be added to the website and information on existing projects can be updated. The database requires the user to create an account and add project information, including estimated emissions reductions. Anyone can email information to Ms. Ruiz, and she can add the project as well.

She also noted that the Coal Subcommittee was charged with developing an updated sector Action Plan. There is an old Plan created in 2006, but it needs to be updated. The Plan should look at short-term and medium-term actions the Coal Subcommittee will undertake, including barriers to CMM projects and how the Coal Subcommittee plans to overcome barriers in certain countries. The United States is planning to update the Coal Subcommittee Action Plan before Methane Expo 2013. It will be shared with Country delegates for comment, then with the Project Network.

Ms. Ruiz summarized the action items that came from this Coal Subcommittee meeting:

- Mr. Pilcher and the team of experts will continue planning the coal-related technical and policy sessions for Methane Expo 2013.
- All Subcommittee members should submit an abstract to present at Methane Expo 2013 or recommend potential speakers. These can be submitted to the ASG at [asg@globalmethane.org](mailto:asg@globalmethane.org).
- Country delegates should start thinking about poster ideas for project opportunities or success stories that can be highlighted at the Expo. Those can be shared with the ASG at [asg@globalmethane.org](mailto:asg@globalmethane.org).
- All participants should market the Expo and distribute information provided on the GMI website at [www.globalmethane.org/expo](http://www.globalmethane.org/expo).
- The United States will update the Coal Subcommittee Action Plan and send it to subcommittee members for comment before Methane Expo 2013.
- Country delegates should work with other in-country representatives to develop the country-specific Action Plan and sector-specific Action Plans.
- All Subcommittee members should review the CMM Technology Database and send updates to the ASG. They should also add projects to the International CMM Database.
- The ASG will add presentations from this meeting and draft minutes to the GMI website. The draft minutes will be distributed for comment.

Ms. Ruiz thanked everyone for attending, and provided a special thank you to Australia for hosting this Coal Subcommittee meeting. She noted it is a true effort in the spirit of GMI.

Mr. Calder thanked GMI for co-sponsoring the seminar, both Co-chairs presiding over the meeting, the ASG for its support, and all of the speakers for thoughtful presentations and discussions.

The meeting was adjourned.

## Annex 1- Coal Subcommittee Meeting Participants



### GLOBAL METHANE INITIATIVE COAL SUBCOMMITTEE MEETING PARTICIPANTS

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## Annex 2 – Coal Subcommittee Meeting Agenda



### GLOBAL METHANE INITIATIVE COAL SUBCOMMITTEE MEETING FINAL AGENDA

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**Held in conjunction with Australia's Coal Mining Methane Abatement Seminar  
InterContinental Hotel, Sydney, Australia  
5 September 2012, 2:00pm**

- 2:00 pm      **Welcome Addresses**
- Co-Chair Felicia Ruiz (USA), Acting Co-Chair Sun Qinggang (China)
  - Brief introductions of all meeting participants
  - Adoption of agenda
- 2:15 pm      **Update from the Administrative Support Group (ASG)**  
*Monica Shimamura, ASG*
- Joining the Project Network
  - New activities
  - GMI Partner Country Action Plans
  - Coordination with Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants
  - Overview of Methane Expo 2013: 12-15 March 2013, Vancouver, Canada
- 2:35 pm      **Update on the Climate and Clean Air Coalition (CCAC) to Reduce Short-Lived Climate Pollutants**  
*Jonathan Habjan, U.S. Department of State*
- 2:45 pm      **Coal Mines Sector Plans for Methane Expo 2013 in Vancouver, Canada**  
*Ray Pilcher, Raven Ridge Resources*
- Planning for technical and policy sessions
  - Showcasing coal mine methane project opportunities
- 3:45 pm      **Tea Break**
- 4:00 pm      **Updates from Partner Countries on New or Planned Activities and Action Plans**
- |                    |                        |
|--------------------|------------------------|
| • <i>Australia</i> | • <i>Mongolia</i>      |
| • <i>China</i>     | • <i>Poland</i>        |
| • <i>India</i>     | • <i>United States</i> |
- Updates from Project Network on Activities and New Developments in 2012**
- *MEGTEC Systems*
  - *UNECE Ad Hoc Group of Experts*
- 5:40 pm      **Action Items and Review**  
*Felicia Ruiz, Co-Chair*
- Updates to Coal Mine Methane Technology Database

## **Annex 2 – Coal Subcommittee Meeting Agenda**

- Coal Subcommittee Action Plan
- Action Items for next Coal Subcommittee meeting in Vancouver, Canada

6:00 pm

**Adjourn**