



GLOBAL METHANE INITIATIVE COAL SUBCOMMITTEE MEETING

14th Session of the Coal Subcommittee
13 October 2011
The Park Inn Hotel
Krakow, Poland

FINAL MINUTES

United Nations Economic Commission for Europe (UNECE) Ad Hoc Group of Experts on Coal Mine Methane, 7th Session: 11 October 2011

The United Nations Economic Commission for Europe (UNECE) Ad Hoc Group of Experts on Coal Mine Methane met for the 7th session immediately prior to the Global Methane Initiative (GMI) meetings in Krakow. The meeting was conducted by Mr. Branko Milicevic, the Secretariat, and chaired by Mr. Raymond Pilcher, the Chair of the Ad Hoc Group of Experts. Participants included representatives from Australia, Canada, India, Poland, Russia, Sweden, Ukraine, the United Kingdom, the United States, and the United Nations Framework Convention on Climate Change. The group discussed the ongoing work to disseminate the “Best Practices Guidance for Effective Methane Drainage and Use in Coal Mines” through workshops in China, Kazakhstan, and Ukraine, and discussed the future activities of the Ad Hoc Group of Experts, including a new externally funded project funded by the Russian Federation.

A formal agenda for the meeting will be posted on the [UNECE website](#).

Coal Site Visit: 12 October 2011

On 12 October 2011, the GMI Partnership-wide meeting participants split up to attend one of four site tours corresponding to their sector of interest. Twenty-five participants from 14 countries traveled to the Central Mining Institute of Katowice’s experimental mine “Barbara,” where researchers discussed their work in improving mine safety. They demonstrated the potential impact of a coal dust explosion by conducting a real explosion in their test mine. Following this visit, participants visited Jastrzębska Spółka Węglowa S.A.’s “Pniówek” hard coal mine, where coal mine methane (CMM) is recovered and utilized in a 10-megawatt (MW) electric power project and evaporative cooling system for the mine.

Presentations from the [“Pniówek” hard coal mine](#) visit can be found on the GMI website.

Coal Technical Sessions: 13-14 October 2011

A welcoming plenary session on 13 October 2011, moderated by Lucyna Jaremczuk of the Poland Ministry of Economy Bilateral Economic Cooperation Department, welcomed participants from all sectors. Welcoming addresses were provided by Marcin Korolec, Undersecretary of State of the Poland Ministry of Economy, and William Heidt, Deputy Chief of Mission of the U.S. Embassy in Warsaw. Jim Jones, Deputy Assistant Administrator of the U.S. Environmental Protection Agency (U.S. EPA) and acting GMI Steering Committee Chair, addressed the [state of the Initiative](#). In addition, keynote addresses were provided by: [Paul Gunning](#), Acting Director of the U.S. EPA Climate Change Division; [Havard](#)

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[Toresen](#), Deputy Director General of the Norway Ministry of Economy and Co-chair of the Arctic Council Task Force on Short-Lived Climate Forcers (SLCFs); and [Zbigniew Kamienski](#), Deputy Director of the Poland Ministry of Economy. Following the plenary session, meeting participants split into sector-specific meetings and sessions for the remainder of the first day and the beginning portion of the second day. First, the Coal Subcommittee met to discuss important business, which is summarized in the meeting minutes below. For the rest of the sector-specific portion of the meeting, the coal sector participated in technical breakout sessions.

Each of the five coal sessions featured a different panel of speakers from multiple countries and backgrounds. Topics covered included:

- Best practices for CMM drainage and utilization globally (Session 1)
- Status and trends in CMM technology development and research (Session 2)
- Technology development in the CMM sector for both surface mine drainage and ventilation air methane (VAM) (Session 3)
- Policy updates on Australia's Clean Energy Futures package and the Coal Sector Assistance Packages
- An update on CMM activities in Poland, including a discussion on hazard abatement and obstacles and incentives for project development (Session 4)

Presentations from the coal technical sessions can be found on the GMI website at: <http://www.globalmethane.org/news-events/meeting20111012.aspx>.

A closing plenary session on 14 October included reports from each of the four Subcommittees on their activities (which can be found on the GMI website at the link above), [a report from the Steering Committee](#), and a closing address.

The Steering Committee charged the Subcommittees with the following actions:

- Work directly with the Administrative Support Group (ASG) to provide information for the GMI website, especially updates related to sector-specific resources and project success stories and any outreach activities, such as press releases.
- Utilize the *Methane International* newsletter to highlight projects, conferences, or other success stories.
- Distribute GMI outreach materials and/or make presentations at energy-, environment-, or industry-related conferences.
- Continue efforts to better engage Project Network members in meetings and activities (e.g., hold meetings in conjunction with industry-related events).
- Begin planning for the GMI Partnership Expo, to be held in early 2013 in Vancouver, Canada. Identify and create project opportunities and success stories for the Expo showcase, and identify topics/speakers and develop agendas for technical and policy workshops in each sector.
- Continue to identify how Subcommittees can support and assist Partners in both the development and implementation of the GMI Partner Action Plans.
- Hold at least one in-person meeting prior to the Expo, to be supplemented with webinars as necessary.

Coal Subcommittee Meeting: 13 October 2011

The GMI Coal Subcommittee held its 14th session on 13 October 2011 in Krakow, Poland, on the first day of the GMI Partnership-wide meeting. Attendees discussed updates from the ASG, including country-specific action plans and the GMI Partnership Expo (scheduled for early 2013). Representatives from

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Partner Countries shared updates relating to CMM activities. The Subcommittee also discussed the draft policy white paper on flaring and the draft updated coal mine technology database. Lastly, the Subcommittee discussed potential meetings in 2012.

The following sections provide more details of the meeting discussions.

Opening Remarks and Introduction

The Coal Subcommittee was attended by GMI Partner country delegates, Project Network members, and ASG staff. Thirty-nine people, representing 13 countries, were present. A list of attendees is included as Annex 1 to these minutes. The meeting was opened at 11:45 am Central European Summer Time (CEST).

Presiding over the meeting was:

- Co-chair Dr. Pamela Franklin, team leader of U.S. EPA's Coalbed Methane Outreach Program (CMOP).
- Acting Co-chair Dr. Zhao Guoquan of the China Coal Information Institute (CCII).
- Acting Co-chair Mr. Baidya Nath (B.N.) Basu of India's Central Mine Planning and Design Institute (CMPDI).

Dr. Franklin opened the meeting by welcoming everyone and explaining this Coal Subcommittee meeting was scheduled for just two hours to allow plenty of time for pertinent technical talks. She then invited Professor Jozef Dubinski, General Director of the Central Mining Institute in Poland, to give opening remarks to the Subcommittee. Following his address, Dr. Franklin asked the acting Co-chairs from India and China to provide opening remarks.

Professor Dubinski noted that because CMM is very hazardous, Poland is interested in increasing the efficiency of degasification and is researching special solutions and technologies to use for detecting methane in underground mines. In addition to using CMM, Polish mines are interested in using coalbed methane (CBM) and recovering and reusing VAM, which comprises 60 to 65 percent of Poland's coal methane emissions. Since methane emissions are increasing every year and Poland is focused on environmental protection and mine safety, Poland is looking for more effective solutions for degasification and is hoping to decrease mine accidents.

Mr. Basu indicated that Co-chair Mr. A.K. Singh was sorry to miss the Subcommittee meeting, and he welcomed the distinguished participants of the coal sector. Mr. Basu then provided a brief update on CBM/CMM activities in India. India has already taken initiative to capture methane gas and use it as energy by identifying CBM/CMM development blocks. Half a million cubic meters per day (mcm/day) of methane is currently captured, and India hopes that 7 mcm/day can be captured by 2014. One mine is using methane to power a generator to supply energy to a city. India is a strong supporter of GMI and hopes to continue to see the Initiative grow stronger.

Dr. Zhao welcomed the group on behalf of Co-chair Dr. Huang Shengchu, who could not attend the meeting. Mr. Zhao expressed his hope for a successful meeting.

Introductions of country delegates, Project Network members, and other attendees followed. Dr. Franklin presented the agenda. A copy of the final agenda is included as Annex 2 of these minutes.

Update from the Administrative Support Group

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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 June 2011 Coal Subcommittee meeting held via webinar and teleconference.

- There are 41 Partner Countries to date and membership continues to expand.
 - Norway was approved to join GMI as a new Partner during this meeting in Krakow.
 - Norway will not participate in the Coal Subcommittee at this time.
- The ASG has several ongoing activities.
 - The ASG continued to provide outreach via the website and newsletter. Ms. Shimamura specifically encouraged the coal sector to provide updates to the website and article ideas for the *Methane International* publication.
 - The ASG is working to update the sector-specific GMI fact sheets, which will include case studies and project highlights.
 - The ASG is working on improving the GMI project tracking and reporting system.
- GMI will hold a GMI Partnership Expo in Vancouver, Canada in early 2013.
 - Same basic framework as the previous Expos (e.g., concurrent sector-specific sessions, site visits, exhibition hall, project opportunities).
- There will be a new Subcommittee focusing on municipal wastewater.
 - In the interim, the U.S. will chair the Subcommittee while additional leadership and members are identified.
 - The ASG encourages those interested in serving as Co-chairs or members to contact them at asg@globalmethane.org.
 - The Municipal Wastewater Subcommittee's first task will be to develop a sector-specific action plan.
- The ASG distributed guidance to help Partners develop country-specific action plans.
 - The ASG is requesting that Partner Countries designate an official representative to serve as the point-of-contact for the country-specific action plan. Subcommittee members should work with the point-of-contact to ensure that coal sector information is included.
 - The ASG is tasking countries to complete their action plans by the GMI Partnership Expo in Canada in early 2013.
- GMI is looking toward the future.
 - There were discussions on the organizational structure of GMI, including the ASG and Steering Committee Chair.
 - There were discussions on ideas for financial mechanisms to better support methane project development.
 - GMI is following international developments on SLCFs and will keep Partners informed.

Mr. Charlie Parker (Boston Carbon Corporation) asked Ms. Shimamura if there are discussions about developing a Subcommittee focused on shale gas and hydraulic fracturing. Ms. Shimamura indicated these topics are currently addressed under the Oil & Gas Subcommittee and there are not discussions to develop a stand-alone Subcommittee on these topics at this time.

Partner Country and Project Network Updates

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Following the ASG updates, country representatives were asked to provide the Subcommittee with updates on their countries' CMM activities since the last Subcommittee meeting. Presentations submitted by country representatives to accompany their discussions can be found on the GMI website at: <http://www.globalmethane.org/news-events/meeting20111012.aspx>. Brief summaries of each update are provided below.

Australia

Ms. Emma Fagan (Department of Resources, Energy and Tourism) provided [Australia's country update](#) and indicated that Australia's Clean Energy Future Climate Change Plan was passed by the House on 12 October 2011 but still needs to be passed by the Senate. The plan includes a fixed carbon pricing scheme that will commence in July 2012. By July 2015, it will transition to a fully flexible price under an emissions trading scheme with the price determined by the market. Australia estimates the carbon pricing scheme will result in an 80 percent reduction 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 \$1.264 billion over five 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.

- Mr. Hasan Hüseyin Erdogan (Turkey's Ministry of Energy and Natural Resources) asked why a subsidy would be provided to those mines with the highest emissions. Ms. Fagan replied that coal mining is a lucrative business in Australia, and they hope by introducing the abatement package, the coal companies will be encouraged to reduce emissions.

China

Dr. Zhao Guoquan (CCII) provided [China's country update](#) on new development of CBM/CMM projects and policies in China. He noted that 36.8 trillion cubic meters of CBM/CMM resources are contained in coal fields to a depth above 2,000 meters, which is as much as the total amount of conventional natural gas resources in China. China's CBM reserves are the third largest in the world. CBM recovery with surface wells was 1.45 billion cubic meters (bcm) in 2010. The underground CMM drainage is 7.35 bcm in 2010, and the CMM utilization was 2.5 bcm in 2010. With the increase in drainage volume, coal mine gas explosion accidents and deaths have decreased.

High concentration CBM (with methane concentrations above 30 percent) are often used for civic fuel, chemical fuel, power generation, CBM/CMM liquefaction, and CBM compression. Low concentration CMM (between 1 and 30 percent methane) is used for power generation. VAM (with less than 0.75 percent methane) can be destroyed by oxidation, as is done at several mines.

Shanghai Cimic Tile Corn, Ltd. uses CMM from Fencheng Mining Bureau as industrial fuel to produce ceramic tiles. By the end of 2008, 1,400 CMM generator units with a total capacity of 920 MW were installed in China. The world's largest CMM power plant—a 120-MW CMM power plant in Jincheng—is in operation and will consume 180 mcm of CMM and generate 720 million kilowatt hours (kWh) of electricity.

Several projects that have been carried out by CCII include:

- Huannan Pansan CMM destruction and utilization
- Yangquan Coal Mining (Group) Liability Company CBM utilization in alumina sintering furnace
- Shanxi Jincheng 120-MW CBM power generation
- Songzao Coal & Power Co. Ltd. CBM comprehensive utilization power generation

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- CBM utilization at Tiefa mine area

The China CBM clearinghouse worked with the U.S. EPA to conduct research on the technical assessment of coal mine recovery and utilization from May 2009 to May 2011. Researchers collected, classified, and studied coal mine gas recovery and utilization technologies. Researchers also conducted a field investigation and analyzed the similarities and differences of various coal mine recovery and utilization in different regions of China.

New coal mine safety regulations regulate the use of CMM as combustion gas when the methane concentration is less than 30 percent. Previous regulations stated that CMM could not be used in any applications with concentrations less than 30 percent. The new regulation removes the restriction on using the low concentration CMM for power generation using internal combustion engines and utilization after purification.

In addition, China has established other new policies. On March 2010, the State Administration of Work Safety approved 10 industry standards on low concentration CMM transportation and utilization, which took effect on 1 July 2010. Three national standards were developed to establish CBM/CMM utilization guidelines, including household use and compressed CBM as vehicle fuel. A new policy was issued to exempt the tax on imported goods for CBM exploration and development projects during the 12th five-year plan period to support CBM development and CMM prevention.

China's 12th five-year economic and industry development plan sets forth an annual 22 bcm target for CBM/CMM total drainage volume within the next five years (10 bcm from CBM and 12 bcm from CMM each year).

New CBM/CMM developments in China include:

- CBM transportation pipelines from Jincheng to Changzhi were built and tested. These pipelines will encourage CBM/CMM development.
- Four ministries and commissions jointly issued a notice that China National Petroleum Corporation (CNPC), China Petroleum and Chemical Corporation (SINOPEC), and Henan Provincial Coal Seam Development and Utilization Co., Ltd. were authorized to have the exclusive right for CBM foreign cooperation. Four companies will hold this right, including China United Coalbed Methane (CUCBM).
- The China National Offshore Oil Corporation became a shareholder of CUCBM.
- The total drainage volume of CBM/CMM in Jincheng Anthracite Mining Group reached 0.985 bcm in the first half of 2011, and the utilization volume reached 0.579 bcm. Its utilization volume accounts for 30 percent of the national total and its drainage volume accounts for 60 percent of China's drainage.

Dr. Zhao ending by inviting all coal sector participants to attend the 11th international CBM/CMM meeting in Beijing on 1 December 2011.

Germany

Mr. Tim Hegemann (DMT GmbH & Co. KG) noted that production was down to 20 million tons of hard coal last year. Germany utilized around 60 mcm of pure methane in mines to create electrical energy and heat. Abandoned coal mines utilized around 200 mcm of pure methane to create 800 million kWh of electrical energy. The amount of methane in open coal mines is increasing, and methane is decreasing in other coal mine areas. Germany is focusing on utilizing methane from abandoned mines, but they are facing problems with decreased methane content. Methane concentration is down to 22 percent, so they may not be able to continue utilizing the gas as much in the future.

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India

Mr. B.N. Basu (CMPDI) provided noted the government of India has awarded 33 CBM development blocks to a variety of operators through an open international bidding system. Production has started in more than 80,000 square kilometers in two blocks. India hopes to produce 7 mcm per day by 2014; there is 1.8 trillion cubic meters of methane potential. Five blocks have been identified for CMM development where methane concentration is high. India has not focused on VAM projects yet.

Poland

Mr. Jacek Skiba (Central Mining Institute) provided a brief update on Poland's activities and indicated he would expand on these activities in his technical session presentation. More than 90 percent of Poland's electricity is produced by coal. Last year, Poland produced 76 million tons, which is a 1 million ton production drop. Methane released during operation increased slightly to 830 mcm per year. Thirty percent of methane was captured using drainage systems and the remaining 70 percent was vented as VAM. Sixty-six percent of the drainage gas was utilized, all of which was from underground mines.

Several CBM concessions have been granted in Poland, but the first initiative to degasify coal seams from surface by wells will begin next month. A technical session presentation will be given on this topic, and on incentives and obstacles for project development in Poland.

There is an existing system used for energy production from CMM in Poland, which only supports high efficiency cogeneration. Poland is analyzing whether this system is sufficient or should be changed to support electricity production from CMM.

Russia

Mr. Oleg Tailakov (Institute of Coal of SB RAS) discussed an ambitious CBM project in the southern part of Russia. Eight wells have already been drilled and a gas power generator has been installed on site, and the project developers plan to utilize the methane onsite as well. Russian coal mines emit about 2 mcm of CMM per year and capture about 10 percent.

Slovakia

Mr. Juraj Ľurove (Technical University of Kosice) indicated that Slovakia is not a GMI Partner, but some country representatives are attending the meeting as observers, and they plan to apply for GMI membership. About 30 percent of Slovakia's energy comes from nuclear power stations, 30 percent from coal, 20 percent from hydroelectric power, and the rest of renewable resources, such as biomass, solar, wind, and geothermal. Slovakia has five underground, brown coal mines. Ninety percent of the production of ground coal lignite goes to power stations to produce electricity. Utilization of methane from coal seams is very low—only about 10 percent of the potential is utilized. Mr. Ľurove wished the best for the meeting and expressed his support for GMI and future global methane policies.

Turkey

Mr. Hasan Hüseyin Erdogan (Ministry of Energy and Natural Resources) provided [Turkey's country update](#), including the latest work in the coal mining industry. Turkey has less than 1 percent of the world's hard coal reserves and approximately 4.2 percent of the world's lignite reserves. Turkey's energy is supplied by coal, oil, natural gas, hydroelectric power, nuclear power, and other renewable, with coal, oil, and natural gas being the most prevalent.

There are four state-owned companies that operate in the coal sector. One company, Turkish Hard Coal Enterprise (TTK), was the only company dealing with hard coal production, but now some private sector companies are also involved. Turkish Coal Enterprises (TKI) produces about half of the lignite in Turkey, and provides heating to residences. Electricity Generation Company produces lignite for its power plants.

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Mineral Research and Exploration Company (MTA) conducts exploration studies. Private companies produce 9 percent of the lignite and 35 percent of the hard coal.

Coal potential has been studied and additional total lignite reserves have been found, bringing the total lignite reserves to 11.75 billion tons. There are 1,319,553 thousand tons of hard coal reserves. In 2009, 75,576 thousand tons of lignite and 2,863 thousand tons of hard coal were produced. Approximately 23,516 thousand tons of coal were consumed by electricity generation, steel production, heating, and industry.

Turkey's primary energy demand will increase by 160 percent by 2020 from a 2003 baseline, and Turkey will import over 70 percent of its energy resources.

Turkey is currently conducting a CBM exploration and utilization project in two districts. Studies around CBM have been taking place in the Zonguldak basin since 1972. The studies were mostly related to mine safety and methane drainage. In recent years, utilization has been considered. In 2005, a contract was signed that included two years of exploration studies in the region. The studies have shown there is about 60 bcm of CBM potential, of which 10 bcm can be recovered.

Turkey is focused on reducing energy imports, and utilizing known lignite and hard coal reserves until 2013 for electricity generation. They plan to increase the amount of power plants running with domestic coal and import coal. They also plan to explore new coal fields, increase coal production, and utilize clean coal technologies.

Mr. Erdogan concluded by expressing Turkey's interest in actively participating in GMI.

United States

Dr. Jayne Somers (U.S. EPA – Coalbed Methane Outreach Program [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 focusing on overcoming the regulatory and institutional barriers to project development through a technical exchange of information to U.S. coal mine project developers. U.S. EPA is coordinating with other government agencies such as the U.S. Trade and Development Agency, which is conducting definitional missions to Colombia, Mexico, Vietnam, and Turkey, and also the U.S. Agency for International Development and the U.S. Department of Energy.

CMOP's annual conference will take place on 18-22 October 2011 in Park City, Utah.

Through a recently effective national greenhouse gas reporting program, the gassiest underground coal mines in the United States began collecting methane emissions data in January 2011, and they will begin reporting that data to U.S. EPA in September 2012. This will help the United States better understand CMM emissions domestically.

Under GMI, U.S. EPA has been supporting a number of GMI activities, including developing a policy white paper on flaring and updating the CMM technology database. U.S. EPA has also been supporting CMM project development by awarding grants. In 2011, grants were awarded to China, Mongolia, Russia, and Turkey.

Since China is the largest coal producer and methane emitter, it is a high priority for U.S. EPA support; U.S. EPA has conducted five full-scale project feasibility assessments in China. Because of the results of the full-scale feasibility study at Songzao Coal Mines in Chongqing Province, CQEIG is moving forward

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with a joint venture for a CMM to liquefied natural gas (LNG) plant. Dr. Somers noted that U.S. EPA has also supported some technology demonstrations conducted by Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) at a coal mine in Tiefu, China, where they are mitigating and utilizing dilute methane with a monolithic catalytic combustor. U.S. EPA has awarded a number of grants in China for data collection and analyses and capacity building.

In India, U.S. EPA has been supporting the CBM/CMM Clearinghouse and development of CBM/CMM policies to clarify ownership and legal issues for several years. U.S. EPA has also provided assistance for VAM and CMM resource assessment and capacity building and technology transfer. A number of U.S. EPA grants have been awarded in India as well.

In Mongolia, U.S. EPA awarded a GMI grant to the Mongolia Nature and Environment Consortium (MNEC) for "CMM Resource Assessment and Emissions Inventory Development."

In Turkey, a grant was awarded to Virginia Polytechnic Institute and State University for "Optimizing Degasification Systems to Reduce Methane Emissions from Turkish Coal Mines." U.S. EPA staff also delivered a presentation at the World Mining Congress in September 2011 in Istanbul.

In Poland, U.S. EPA has awarded two grants in 2008; one completed at an abandoned mine in Zory to convert CMM to thermal and electricity and in a cogeneration plant, and another to conduct VAM testing at 10 mines. U.S. EPA also awarded Poland a grant in 2009 for an ongoing study with Dart Energy.

In Russia, U.S. EPA has been focused on addressing legislative and regulatory barriers to project development. U.S. EPA recently participated in a June 2011 workshop hosted by Uglemetan in Kemerovo (Siberia). EPA recently awarded a grant to Uglemetan to study VAM at Russian coal mines.

In Ukraine, Battelle PNNL (sponsored by U.S. EPA) is working with the Agency for Rational Energy Use and Ecology (ARENA-ECO) to collaborate with policymakers to encourage and facilitate CMM project development. In addition, U.S. EPA held seminar CMM seminar in September 2011 in conjunction with a UNECE *Best Practices* workshop.

In Mexico, U.S. EPA has funded a CMM to LNG project in the Sabinas coal basin.

In addition, the United States has been working with countries that are just getting involved with GMI. U.S. EPA supported the UNECE *Best Practices* workshop in Kazakhstan in May 2011 and is looking to engage with them further. U.S. EPA presented at a CMM workshop in Colombia in February 2011 and may conduct a scoping mission sometime in 2012 to determine Colombia's needs for technical assistance and capacity building. The United States has plans for a scoping mission to Vietnam in October 2011 to identify their needs for training and technical assistance.

Discussion of Draft Policy White Paper on Flaring

Ms. Felicia Ruiz (U.S. EPA – CMOP) provided the context for the Subcommittee's revisiting the issue of flaring-only: the GMI Terms of Reference (as revised and adopted in 2010 at the launch of GMI) expanded the scope of GMI to explicitly include methane abatement in addition to methane utilization. In 2010, the Steering Committee charged the Subcommittees with updating their actions plans and developing a plan for addressing abatement in each sector.

At the October 2010 Coal Subcommittee meeting in Beijing, the group discussed developing a technical paper to address flaring as a CMM end use. Previously, in 2006, the Subcommittee had discussed, but never formally adopted, a white paper that advocated that flaring should be considered as an option only

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if utilization was not viable. On behalf of the Subcommittee, U.S. EPA drafted a new position paper and distributed it to the Subcommittee for comment in August 2011.

Ms. Ruiz summarized the draft paper for the Subcommittee. The paper first addresses the Subcommittee's historical priorities under the Methane to Markets Partnership, to capture methane and use it instead of destroying it without any energy benefit. Based on the data in the GMI international CMM project database, there are currently 23 CMM projects that use flares in several countries. Some of those projects used flares because there was no continuous flow of gas that could be used for electricity generation. Others used flaring because it was more economically feasible than energy recovery. This paper discusses how flaring can be an integral part of a project or an interim measure for carbon credits while a more full energy recovery project is implemented. It notes that recovering energy instead of flaring results in 15 percent less greenhouse gas emissions. The conclusion of the paper is that the Subcommittee understands and appreciates flaring benefits when appropriate. The paper advocates flaring rather than venting methane. In particular, flaring is appropriate when it is part of an overall end use and mitigation project. The paper also provides guidance for considering CMM flaring abatement projects.

- Mr. Hegemann suggested the “or” used in the second bullet in the paper’s conclusions be changed to “and.” The second bullet read: “Flaring-only of drained CMM is most appropriate where the gas is low-quality (e.g., lower than 40% methane) **or** energy recovery is infeasible because the gas is not needed onsite or is not accessible to energy markets.” He noted that flaring might be appropriate even when the methane is not low quality, but it is most appropriate when it is low quality **and** cannot bring energy to the market. Ms. Ruiz noted she would make this change.
- Dr. Franklin moved that the paper be accepted with the change noted and published as a position paper on flaring. There were no objections.

The final version of the Subcommittee’s [policy white paper on flaring](#) can be found on GMI’s website.

Discussion of Draft CMM Technology Database

Dr. Somers discussed the updated [CMM technology database](#), which was initially prepared by Australia in 2005. The U.S. EPA updated, expanded, and made the technology database more dynamic, in light of new commercial developments and research and bench testing of new technologies. General technologies are listed alphabetically and information on each is included below it. Next to each technology, the status is listed, which notes if it has been bench tested, only commercial used with other gases, or used in full-scale CMM projects. In addition, case studies were added on operating projects and the project contacts were listed. Dr. Somers noted this document will be a living document on the GMI website that can be added to or changed at any time, and updated periodically. Subcommittee members should review the database to make sure project information is up to date and that the database is a useful search tool for the latest technologies and vendors.

- Mr. Neil Butler (HEL-East Ltd) suggested an item be added to the Subcommittee agenda each year to remind Subcommittee members to review and update the database. He noted the document is unlike some others because it may be constantly changing. If it is added to Subcommittee business regularly, it can be updated and maintained quite easily.
- Dr. Somers agreed with Mr. Butler’s point, and agreed it should be officially presented and updated every year.
- Dr. Franklin agreed and noted the draft database is currently on the GMI website, and the Co-chairs will remind the Subcommittee to review and ensure it is accurate.

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Action Items and Adjournment

Dr. Franklin discussed the following action items resulting from this Subcommittee meeting and then adjourned the meeting.

2013 Expo

Dr. Franklin suggested forming a task force to plan the coal technical and policy sessions for the GMI Partnership Expo to be held in early 2013 in Vancouver, Canada. She indicated in the past, project opportunities were highlighted by poster presentations, and the Steering Committee will likely encourage that again. She indicated developing a task force to meet via teleconference to plan the agenda, identify project opportunities, and highlight successful case studies may be an effective way to start planning for the Vancouver meeting. She will send around a formal call for volunteers following this meeting and encouraged all to participate.

Next Subcommittee Meeting

Dr. Franklin noted that traditionally the Coal Subcommittee meets twice per year, usually in conjunction with another meeting or conference. This year, the Subcommittee held its first webinar meeting, which was an inconvenient time for some countries, but saved on travel cost and allowed greater participation. Dr. Franklin asked for the group's feedback on holding one short, two-hour webinar once per year and holding an in-person meeting for the other meeting per year. Mr. Basu and other participants were in favor of this idea.

Dr. Franklin asked participants to notify the ASG (asg@globalmethane.org) of meetings planned within the next year that would be a good place to hold an in-person Subcommittee meeting. She noted the ASG would plan one in-person meeting in 2012 and one webinar meeting.

Flaring Paper and CMM Technology Database

Dr. Franklin noted U.S. EPA would make the one change to the flaring paper that was discussed and then publish it as a policy document. She reminded the Subcommittee to review the CMM technology database and submit any changes to the ASG and reminded them that it is a living document to be updated periodically. The U.S. EPA will be in charge of incorporating any changes received.

Country-Specific Action Plans

The group was reminded each country should be working on a country-specific action plan that will serve as a blueprint for approaching methane mitigation and project planning. It does not have to include targets, but should include a strategy for identifying emissions and reducing emissions. The plan can include efforts domestically and efforts to help the broader GMI international community. It can also include a list of assistance or technical outreach that a country needs or can provide. Samples are located on the GMI website.

Annex 1- Coal Subcommittee Meeting Participants



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Annex 2 – Coal Subcommittee Meeting Agenda



GLOBAL METHANE INITIATIVE COAL SUBCOMMITTEE MEETING FINAL AGENDA

Coal Subcommittee Meeting Held during the GMI Partnership-wide Meeting 13 October 2011, Krakow, Poland

- 11:30–11:40 **Welcome Addresses and Brief Introductions**
Co-chairs from the United States, India and China
Polish representative
All meeting participants
- 11:40-11:55 **ASG Update**
Monica Shimamura (ASG)
- 11:55-12:55 **Brief Partner Country Updates (5 minutes per country)**
Country delegates
- 12:55-13:05 **Discussion of Draft Policy White Paper—Flaring of Coal Mine Methane:
Assessing Appropriate Opportunities**
Felicia Ruiz (United States)
- 13:05-13:15 **Discussion of Updated Coal Mine Technology Database**
Jayne Somers (United States)
- 13:15 – 13:30 **Review of Action Items and Planning for Next Subcommittee Meeting and
2013 GMI Partnership Expo**
Co-chairs