



## GLOBAL METHANE INITIATIVE COAL SUBCOMMITTEE MEETING

17<sup>th</sup> Session of the Coal Subcommittee  
13 March 2013  
Vancouver Convention Centre  
Vancouver, Canada

### FINAL MINUTES

#### **Methane Expo 2013: 12-15 March 2013**

The Global Methane Initiative (GMI) hosted Methane Expo 2013 on 12-15 March 2013, in Vancouver, Canada. More than 450 people representing more than 45 countries attended the Expo to learn about the latest methane mitigation 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. In addition to site visits, plenary sessions, and sector-specific technical and policy talks, the Expo featured an exhibit hall displaying project opportunity and success story posters and exhibitors.

Following site visits on 12 March and opening plenary sessions during the morning of 13 March (which included welcoming remarks from the host country, a discussion of the state of GMI, and talks about finance and policy), Expo participants split into five technical tracks corresponding with GMI's five sector areas of work. Participants interested in methane mitigation from coal mining attended the GMI Coal Subcommittee during the afternoon of 13 March. The minutes from this meeting are included below. The coal mines sector's first breakout session, which took place during the Coal Subcommittee meeting, covered international coal mine methane (CMM) policy. During this session, speakers from Australia, India, and China provided updates on new developments in their countries' CMM policies.

On 14 – 15 March, the coal mines sector led four additional breakout sessions covering the following topics:

- Carbon markets, incentives, and funding sources (Finance Session)
- Innovation and adaptation of technology for cost-effective use of CMM and abandoned mine methane (AMM) (Technology Session 1)
- Innovation and adaptation of technology for cost-effective ventilation air methane (VAM) abatement (Technology Session 2)
- Safe and effective capture of CMM and VAM (Best Practices Session)

Each session featured a diverse panel of speakers from multiple countries and backgrounds. In all, the coal mines sector heard from 19 speakers and five moderators, who covered recent developments and innovations in CMM abatement and utilization. Presentations from the coal technical and policy sessions can be found on GMI's website at: [http://www.globalmethane.org/expo\\_canada13/coal.html](http://www.globalmethane.org/expo_canada13/coal.html).

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Methane Expo 2013 was brought to a close on 15 March following updates from the GMI Steering Committee and a closing plenary.

### **GMI Coal Subcommittee Meeting: 13 March 2013**

The GMI Coal Subcommittee held its 17<sup>th</sup> session on 13 March 2013 in Vancouver, Canada, on the second day of Methane Expo 2013. Co-chairs Felicia Ruiz (United States), A.K. Debnath (India), and Huang Shengchu (China) provided opening remarks and welcomed 71 participants, the largest number of Coal Subcommittee meeting attendees to date. Speakers from Australia, China, and India highlighted the developments in their countries' CMM policies during the Policy Sessions. Delegates from China, India, Mongolia, Poland, Turkey, Ukraine, and the United States provided updates on recent and future CMM activities in their countries. The chair of the United Nations Economic Commission for Europe (UNECE) Ad Hoc Group of Experts on CMM provided an update on efforts to disseminate their best practices guide. Finally, the subcommittee discussed its action items and planning for 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 Administrative Support Group (ASG) staff. Seventy-one people, representing 15 countries, were present. A list of attendees is included as Annex 1 to these minutes. The meeting opened at 2:00 p.m. local Vancouver time. Presiding over the meeting and providing opening remarks were:

- Co-chair Dr. Huang Shengchu, President of the China Coal Information Institute (CCII).
- Co-chair Mr. A.K. Debnath, Chairman and Managing Director of India's Central Mine Planning and Design Institute (CMPDI).
- Co-chair Ms. Felicia Ruiz, international program leader of U.S. Environmental Protection Agency's (U.S. EPA's) Coalbed Methane Outreach Program (CMOP).

Introductions of country delegates, Project Network members, and other attendees followed. A copy of the final agenda, which was approved by the subcommittee, is included as Annex 2 of these minutes.

### **Coal Policy Session**

To ensure ample time for technical and policy presentations during the Expo, the coal mines sector Policy Session took place at the beginning of the Coal Subcommittee meeting. Moderated by Mr. Clark Talkington of Advanced Resources International (ARI), the Policy Session featured the following topics and speakers:

- [Policies and Programs to Address Fugitive Emissions from Coal Mining in Australia](#): *Bruce Murphy, Australia Department of Resources, Energy and Tourism*
- [Current Situation of Development and Utilization of Coal Mine Methane \(CMM\) and Potential During 12th Five-Year Plan in China](#): *Huang Shengchu, CCII*
- [Development of CMM in India: Opportunities & Challenges](#): *B.N. Prasad, CMPDI*

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### Partner Country Updates

Following the Policy Session, country representatives were asked to provide the subcommittee with updates on recent and future CMM activities. Delegates from China, India, Mongolia, Poland, Turkey, Ukraine, and the United States spoke. Brief summaries of each update are provided below.

#### *China*

Co-chair Dr. Huang Shengchu (CCII) provided [China's country update](#). Dr. Huang expects more government funding to support CMM and CBM activities in the coming years. CMM recovery in 2012 increased by 25 percent compared to 2011, with activities in Shanxi Province — the largest province for coal activities in China—greatly contributing. China has increased CMM drainage significantly since GMI's inception in the eight key state-owned coal mining groups, as shown by comparing CMM drainage in 2005 and 2011. CBM production volume also increased in China, but there is still quite a bit of methane available for utilization. The government is encouraging companies to develop more gas utilization projects, especially those that use low concentration methane (e.g., some companies are trying to use low concentration methane for power plants). Power generation is the best CMM utilization option in China and over the past few years, several power plants have been installed, with a total capacity of 1,500 megawatts (MW) as of the end of 2011.

To close his presentation, Dr. Huang invited all the subcommittee members to the 13<sup>th</sup> International Symposium on CBM/CMM, which will be held on 24-25 October 2013 in Beijing.

#### *India*

Mr. R.K. Chopra (CMPDI) opened [India's country update](#) by stating coal production is increasing quickly in India, as is economic growth. India is the third largest coal producing country in the world, and coal is the main source of energy supply in India, meeting about 53 percent of commercial energy needs. Methane emissions from India's mostly open cast coal mines and some underground mines are increasing. The government is focused on mitigating methane emissions from the coal mining sector and would prefer to utilize CMM as much as possible.

The Indian government allotted 33 CBM development blocks in four rounds of bidding, and production has started in three blocks. India's CBM/CMM Clearinghouse is providing an international platform for CMM development opportunities in India. A demonstration project for capturing and utilizing CMM was successfully implemented at Moonidih mine, which demonstrated the efficacy of CMM projects and paved the way for commercial development in other areas. In addition, CMPDI has played a key role in identifying suitable CMM blocks. The government is working on a CMM policy and once it is developed, five CMM blocks identified by CMPDI will be offered.

The CBM/CMM Clearinghouse has promoted CMM/CBM development in India since it was founded in 2008. The Clearinghouse publishes information on its website (e.g., CMM development opportunities, technical papers, and newsletters), facilitates training programs, and sponsors visits to attend seminars and conduct onsite training. The Clearinghouse was originally sponsored for three years and sponsorship has been extended another three years.

#### *Mongolia*

Dr. Mendabayar Badarch (Mongolian Nature and Environment Consortium [MNEC]) provided [Mongolia's country update](#). He noted policy changes following Mongolia's election last year, and the establishment of a new Ministry of Mining. Coal is the main source of energy in Mongolia and it drives economic development. Mongolia's coal reserves are substantial, located in over 15 basins, and are still not fully identified. Resources increase from year-to-year, and its coal reserves are an important export for the Mongolian government. Production and export have increased 10-fold in Mongolia. Mongolia has

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60 companies engaged in production and marketing of coal, which range from fully state-owned to partially state-owned, locally owned, and private sector). Most of Mongolia's coal is supplied to thermal power stations.

The energy sector contributes 60 percent of Mongolia's greenhouse gas (GHG) emissions, and Mongolia is committed to reducing these emissions. It is attractive to also increase power generation and mine safety while decreasing methane emissions. Mongolia sees CBM/CMM as a new and exciting area of sustainable development.

There are 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. Mongolia has identified ways to overcome these barriers and is working to implement them.

From 2007 to 2008, Mongolia conducted a pre-feasibility study on the possibilities of methane recovery and utilization in the Nalaikh mine. In 2010, a capacity building workshop was held in Mongolia to discuss CMM resources and barriers to project implementation. Also in 2010, Mongolia received a GMI grant to conduct a CMM resource assessment and emissions inventory at five mining areas throughout the country. Under this grant, training sessions were held to teach Mongolians how to collect and analyze coal samples. 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, and conduct capacity building activities.

### *Poland*

Mr. Jacek Skiba (Central Mining Institute [CMI]) gave [Poland's country update](#). Poland is the largest hard coal producer in Europe; the rest of the countries with hard coal are declining in production. The main Polish coal region is the Upper Silesian coal basin, and there is new coal production in the Lublin basin. Nearly 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.

The gassiness of Poland's coal mines is increasing even though exploitation is decreasing. Polish soils have low permeability, so there is a certain depth (i.e., 400 meters) below which drainage ahead of mining isn't effective with traditional methods. Since mine drainage is difficult, there is an increased methane hazard which often requires stoppage of mine exploitation. Methane is the critical factor for determining coal output in Poland. Poland is seeking new methods for methane drainage because coal is so important for its energy needs.

Poland is working on a feasibility study for cost-effective methane drainage and capture ahead of mining operations. They have tried directional drilling from the surface, but it hasn't been successful to date. Directional drilling from underground galleries to degasify individual coal panels looks to be promising. With its success in the United States, China, and Australia, Poland is trying to implement it. The government is currently drilling a new pinnate experimental well to help with the investigation.

The largest hard coal producer in Poland and CMI are partnering to conduct a feasibility study to verify the technical and economic efficiency to produce electricity and cold air from VAM. In summary, 70 percent of Poland's drained gas isn't being utilized and new incentives are needed to stimulate more efficient CMM utilization.

### *Turkey*

Dr. C. Özgen Karacan (National Institute for Occupational Safety and Health) provided [Turkey's country update](#). Turkish Coal Enterprises (TKI) is a state-owned enterprise that produces 30 to 35 million tons of

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marketable coal annually, 80 percent of which is used by thermal power plants. TKI produces quality coal and helps contribute to the State's energy policies.

Several gas explosions happened in past years but recently, Turkey has found that methane is manageable. Dr. Karacan discussed one feasibility study in Turkey to demonstrate how methane has been managed. In one panel of Soma-Eynez mine, mine personnel measured unusual methane concentrations in roadway development, as well as in mining of the upper bench of the coal seam. Mining was suspended and a feasibility study was conducted to evaluate gas conditions and assess methane drainage options. Gas samples were taken at several locations and model results were considered to determine how to drain and abate the gas.

### *Ukraine*

Mr. Igor Yashchenko (Ministry of Energy and Coal Industry of Ukraine) opened [Ukraine's country update](#), by noting the ministry has developed a Coal Industry Development Program that seeks to increase coal production through 2030. It is currently being evaluated by the Cabinet of Ministers of Ukraine. Coal production is growing steadily in Ukraine: increasing in private mines (i.e., not owned by the state) and decreasing in state-owned mines. The Coal Industry Development Program hopes to further reduce the state's share of coal mining and transfer coal mine ownership to private ownership.

Coal in Ukraine is produced in 155 mines, many of which have high methane emissions with potential for spontaneous outbursts. Ukraine's coal production is comparable to Poland, but Ukraine has much higher methane emissions. Degasification recovers about 25 percent of methane emissions. Degasification is conducted at 44 mines, which cover 46 percent of Ukraine's coal production. In 26 of those mines, the methane concentration is less than 25 percent, which prevents use of the methane. Of the gas captured by degasification systems, about 40 to 50 percent is utilized for mine boiler plants, gas generators, flaring, heating the coal mine shaft, or car fuel. There is insufficient mine degasification and methane utilization for many reasons, including a lack of proven CBM degasification technologies and gaps in legislation and regulatory acts to promote investment. There are several benefits to implementing degasification and utilization projects in Ukraine, including improved mine safety, greater use of alternative fuels, and reduced GHG emissions. The Ministry of Energy and Coal Industry hopes to change the regulatory environment to provide incentives and opportunities to improve the investment climate in this field.

### *United States*

Co-chair Ms. Felicia Ruiz (U.S. EPA CMOP) gave the [U.S. country update](#). She provided an update on domestic initiatives to reduce CMM emissions and international activities supported by the U.S. EPA through GMI.

Domestically, the United States updated its country-specific coal sector Action Plan, which is available for review on GMI's website: [http://www.globalmethane.org/documents/coal\\_cap\\_us.pdf](http://www.globalmethane.org/documents/coal_cap_us.pdf). In addition, the United States updated its entire country-specific Action Plan, which covers plans for all sectors. It is available for review at: [http://www.globalmethane.org/documents/US\\_GMI\\_Action\\_Plan.pdf](http://www.globalmethane.org/documents/US_GMI_Action_Plan.pdf). These Action Plans are intended to be living documents that will be updated periodically.

One-hundred seventy-five U.S. underground coal mines reported GHG emissions for 2011 to U.S. EPA, and those data are available online. In addition, CMOP held a successful 2012 U.S. CMM Conference 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 international activities, including planning the Methane Expo 2013 technical and policy sessions.

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### United Nations Economic Commission for Europe Ad Hoc Group of Experts on Coal Mine Methane Update

Mr. Ray Pilcher, Chair of the UNECE Ad Hoc Group of Experts on CMM, provided an update on its activities. Mr. Pilcher reminded the subcommittee that in 2010, the UNECE produced the [Best Practices Guide for Effective Methane Drainage and Use in Coal Mines](#) intended for non-technical audiences and as a tool for policy decision-makers. This free guide is available online in English, Russian, and Chinese. Since 2012, the Ad Hoc Group of Experts on CMM has been working to disseminate the best practices outlined in the guide by hosting a series of workshops in China, Kazakhstan, and Ukraine. 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.

In April 2013, the Ad Hoc Group of Experts on CMM will host an open meeting to discuss technical aspects of mining best practices and reaching out to unsafe mines worldwide. The group is working with Russia on a new grant to help Russian coal mines adopt best practices. This grant is the beginning of work the group hopes to continue (i.e., working with mines directly to make them safer). They also hope to add modules—including case studies—to enhance the best practices guide. In addition, they hope to establish an international center of excellence on CMM as a platform to train mining technical professors, mine managers, and anyone working in mines (whether on business or technical aspects of mines). The April 2013 meeting will focus on, among other topics, how and where the international center will be developed.

#### Action Items and Adjournment

Ms. Ruiz reminded meeting participants the Steering Committee charged each Partner Country with updating its sector-specific and country-specific Action Plans. The United States recently updated its country-specific and coal sector Action Plan as well as its entire country-specific Action Plan, which covers plans for all sectors. These Action Plans are intended to be living documents that are updated frequently. Ms. Ruiz asked all country delegates to work on their Action Plans.

She also noted the Coal Subcommittee was charged with updating its sector-specific Action Plan. The previous plan was created in 2006, but it hasn't been updated since the Coal Subcommittee expanded its scope to include methane abatement as well as utilization. Ms. Ruiz noted the co-chairs will work on updating the Coal Subcommittee Action Plan before the next subcommittee meeting, and they will disseminate the revised document for comment.

Ms. Ruiz reminded the group to update company and individual contact information in the CMM Technology Database, which includes contact information for technology vendors, consultants, manufacturers, and more working in the CMM and CBM field. As a point of reference, the co-chairs and the ASG direct individuals with questions about CMM vendors and projects to the CMM Technology Database or the Project Network database on GMI's website, so it is imperative to keep the database up to date.

Ms. Ruiz also reminded the group about another great resource, the International CMM Projects Database, which stores information about any CMM project—whether an idea, planned, or operating—worldwide. 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.



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Finally, Ms. Ruiz mentioned the ASG will begin planning the next Coal Subcommittee meeting for late 2013. If a country would like to host an in-person meeting, please email the ASG at [asg@globalmethane.org](mailto:asg@globalmethane.org). If no host steps forward, the meeting will be held via webinar and teleconference. Ms. Ruiz also reminded the group about other upcoming CMM conferences, including:

- UNECE Ad Hoc Group of Experts on CMM meeting in Geneva, Switzerland, on 29 April 2013
- China Coal Information Institute's 13<sup>th</sup> annual CMM/CBM Symposium in Beijing, China, on 24-25 October 2013
- A CMM meeting in Ranchi, India (dates to be determined)

In summary, action items from the meeting include the following:

- Country delegates will:
  - Suggest possible locations for the next Coal Subcommittee meeting in conjunction with an existing, related meeting in late 2013.
  - Review the United States Coal Sector Action Plan ([http://www.globalmethane.org/documents/coal\\_cap\\_us.pdf](http://www.globalmethane.org/documents/coal_cap_us.pdf)).
  - Draft their own country-specific Coal Sector Action Plans.
  - Review contact information in the CMM Technology Database at: [http://www.globalmethane.org/documents/partners\\_cmm\\_tech\\_database.pdf](http://www.globalmethane.org/documents/partners_cmm_tech_database.pdf) and send updates to the Administrative Support Group (ASG) at [asg@globalmethane.org](mailto:asg@globalmethane.org).
  - Add CMM projects (whether simply ideas or actually operating) to the International CMM Project Database, which can be found at: <http://www2.ergweb.com/cmm/index.aspx>.
- The Co-Chairs will:
  - Update the Coal Subcommittee Action Plan before the next meeting and disseminate the revised document for comment.
- The ASG will:
  - Work with Partner Countries to identify a host for the next Coal Subcommittee meeting in late 2013, or schedule an Internet meeting.

Ms. Ruiz thanked everyone for attending and reviewed the schedule for the coal technical sessions to be held 14 –15 March 2013 during Methane Expo 2013.

The meeting was adjourned.

## Annex 1- Coal Subcommittee Meeting Participants



### GLOBAL METHANE INITIATIVE COAL SUBCOMMITTEE MEETING PARTICIPANTS

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#### PARTICIPANTS

##### AUSTRALIA

**◆David Cork**

Technical Director  
Corky's Sustainable Energy  
386 Maitland Road  
Mayfield, NSW 2304  
Australia  
+61 2 49 608846  
david.cork@thecorkysgroup.com.au

**Isaac Fischmann**

Senior Project Engineer  
Energy Developments Limited  
Building 17, 2404 Logan Road  
Eight Mile Plains  
Brisbane, QLD 4113  
Australia  
+ 61 7 3275 5573  
isaac.fischmann@edl.com.au

**\*Hua Guo**

Theme Leader  
Coal Mining: Enhancing Value, Safety and  
Environment  
CSIRO  
1 Technology Court  
Pullenvale, QLD 4069  
Australia  
+617 3327 4608  
hua.guo@csiro.au

**◆Jade Hamilton**

Process Engineer  
Corky's Sustainable Energy  
386 Maitland Road  
Mayfield, NSW 2304  
Australia  
+61 2 49 608846  
jade.hamilton@thecorkysgroup.com.au

**\*Bruce Murphy**

Manager, Coal Sector Programs  
Australian Department of Resources, Energy  
and Tourism  
GPO Box 1564  
Canberra, ACT 2601  
Australia  
+61 2 6243 7050  
bruce.murphy@ret.gov.au

**Shi Su**

Senior Principal Research Scientist  
CSIRO  
1 Technology Court  
Pullenvale, QLD 4069  
Australia  
+617 33274679  
shi.su@csiro.au



## Annex 1- Coal Subcommittee Meeting Participants

### CANADA

#### ◆Raphaël Bruneau

Director, Carbon Markets  
Biothermica Technologies, Inc.  
426 Sherbrooke East  
Montreal, QC H2L 1J6  
Canada  
+1 514 488 3881  
raphael.bruneau@biothermica.com

#### ◆Guy Drouin

President  
Biothermica Technologies, Inc.  
426 Sherbrooke East  
Montreal, QC H2L 1J6  
Canada  
+1 514 488 3881  
guy.drouin@biothermica.com

### PEOPLES REPUBLIC OF CHINA

#### ◆Boni Jiang

Senior Advisor  
Guizhou International Cooperation Center for  
Environmental Protection  
40 Zunyi Road  
Guiyang, Guizhou 550001  
China  
+86 135 9519 2840  
boni@cenergy.cn

#### Yu Lei

Director  
China Coal Information Institute  
35 Shaoyaoju  
Chaoyang District  
Beijing 100029  
China  
+86 10 8465 7806  
yulei@coalinfo.net.cn

#### Cathy Li Wang

China  
cathy.liwang@zhenguan.ca

#### Shen Pingping

Chief Scientist, Professor  
PetroChina  
No.9, Dongzhimen North Street  
Beijing, Dongcheng District 100007  
China  
+86 13701254636  
spp@petrochina.com.cn

#### \*Huang Shengchu

President  
China Coal Information Institute  
35 Shaoyaoju  
Beijing, ChaoYang District 100029  
China  
+86 10 84657806  
huangsc@coalinfo.net.cn

#### Jeff Wan

China  
jeffwan.efw@gmail.com

#### Tim Wang

China  
timwz\_intl@cnpc.com.cn

#### Liu Xin

Senior Engineer  
China Coal Information Institute  
35 Shaoyaoju  
Chaoyang District  
Beijing 100029  
China  
+86 10 8465 7948  
liuxin@coalinfo.net.cn

#### Yang Yan

Senior Engineer  
China National Petroleum Corporation  
No.6, Liupukang Street  
Beijing, Xicheng District 100724  
China  
+86 10 6206 5219  
yangalice@cnpc.com.cn

\* Official Country Delegate

◆ Project Network

## Annex 1- Coal Subcommittee Meeting Participants

### COLOMBIA

◆**Alejandro Avila Acero**

Administrative and Financial Director  
Colombiana de Minerales Ltda  
Diagonal 30a No 8-06  
Barrio Maldonado  
Tunja, Boyaca 57  
Colombia  
+57 311 577 9399  
daf@colombianademinerales.com

◆**Katerine Avila Acero**

Operations Manager  
Colombiana de Minerales Ltda  
Diagonal 30 a No 8-06  
Barrio Maldonado  
Tunja, Boyaca 57  
Colombia  
+57 313 402 6433  
gerencia@colombianademinerales.com

### GERMANY

**Tim Hegemann**

Project Manager  
DMT GmbH and CO. KG  
Am Technologiepark 1  
Essen 45307  
Germany  
+49 201 172 1711  
tim.hegemann@dmtd.de

### INDIA

◆**Rajesh Kumar Chopra**

Director (Technical)  
Central Mine Planning and Design Institute  
Gondwana Place  
Kanke Road  
Ranchi, Jharkhand 834008  
India  
+91 651 2230040  
dirrdt@cmpdi.co.in

◆**Baidyanath Prasad**

General Manager (CBM)  
Central Mine Planning and Design Institute  
Gondwana Place  
Kanke Road  
Ranchi, Jharkhand 834008  
India  
+91 651 2230011  
bnprasad54@yahoo.co.in, gmcbm@cmpdi.co.in

\***Amal Kumar Debnath**

Chairman-cum-Managing Director  
Central Mine Planning and Design Institute  
Gondwana Place  
Kanke Road  
Ranchi, Jharkhand 834008  
India  
+91 651 2230001  
cmd@cmpdi.co.in

\***D N Prasad**

Adviser (Projects)  
Ministry of Coal  
Shastri Bhawan  
New Delhi 110001  
India  
+91 11 23386347  
advp.moc@nic.in

## Annex 1- Coal Subcommittee Meeting Participants

### INDIA (CONTINUED)

#### **Basanta Kumar Prusty**

Assistant Professor  
Indian Institute of Technology  
Kharagpur, West Bengal 721302  
India  
+91 3222 283701  
bkprusty@gmail.com

### JAPAN

#### **◆Sohei Shimada**

Supervisor  
University of Tokyo  
2-9-9, Nakacho, Meguro  
Tokyo 1530065  
Japan  
+81 3 3711 9264  
s-shimada@k.u-tokyo.ac.jp

### MEXICO

#### **◆Mario Alberto Santillan Gonzalez**

Project Manager  
MINOSA  
Carretera Palau-Rosita KM 22.4  
Palau, Coahuila 26350  
Mexico  
+52 864 611 6622  
msantillang@gan.com.mx

### MONGOLIA

#### **\*Mendbayar Badarch**

Director  
Mongolian Nature and Environment Consortium  
Sukhbaatar District  
Erkhoo Street, 2-4  
Ulaanbaatar 976  
Mongolia  
+976 9 919 9276  
mnec8@yahoo.com

#### **Ochirsukh Badarch**

Mongolian Nature and Environment Consortium  
Post office 20, P.O. Box – 344  
Ulaanbaatar-210620  
Mongolia 976  
976-11-354365  
ochirsukhmb@yahoo.co.uk

\* Official Country Delegate

◆ Project Network

## Annex 1- Coal Subcommittee Meeting Participants

### MONGOLIA (CONTINUED)

#### **Zolo Dorj**

Managing Director  
Great Khangai Mining LLC  
205 Arig Center, Building 2/5 Jamiyang Gung  
Street-10, 1-st Khoroo, SB District  
Ulaanbaatar 14240  
Mongolia  
+976 8809 4483  
zolo@gkmining.net

#### **\*Purevdorj Khurelkhuu**

Geologist  
Ministry of Mining  
Government Building 2  
United Nation's Street-5/1  
Ulaanbaatar 15160  
Mongolia  
+976 5 126 0631  
p\_khurel@yahoo.com

### POLAND

#### **\*Piotr Bojarski**

Master's Engineer  
Jastrzebska Coal Company  
Al. Jana Pawla II 4  
Jastrzebie Zdroj 44-330  
Poland  
+48 32 7564491  
pbojarski@jsw.pl

#### **\*Jacek Skiba**

Central Mining Institute  
Plac Gwarkow 1  
Katowice, 40-166  
Poland  
+48-32-3246603  
jskiba@gig.eu

#### **◆Rafal Kolodziejczak**

Specialist  
KHW S.A.  
Damrota 18  
Katowice 40-022  
Poland  
+48504957844  
r.kolodziejczak@khw.pl

#### **\*Ireneusz Stanecki**

Master of Science  
Kompania Weglowe S.A.  
str. Powstanców 30  
Katowice, Slaskie 40-039  
Poland  
+48 604 112 173  
i.stanecki@kwsa.pl

### SWEDEN

#### **Richard Mattus**

Consultant  
RM Business Consulting  
Aelgstigen 18  
Oejersjoe SE-43350  
Sweden  
+46 705 22 66 10  
richard.mattus@gmail.com

## Annex 1- Coal Subcommittee Meeting Participants

### TURKEY

**\*C. Ozgen Karacan**

Senior Research Engineer  
NIOSH/OMSHR  
626 Cochran Mill Road  
PO Box 18070  
Pittsburgh, PA 15236  
United States  
+1 412 386 4008  
cok6@cdc.gov

**İffet Uður Kömbe**

Chief Engineer  
Turkish Coal Enterprises  
TKY Genel Müdürlüğü Hipodrom Cad.  
No:12 Yenimahalle  
Ankara 06630  
Turkey  
+90 312 5401305  
iffetugur@hotmail.com, kombei@tki.gov.tr

**\*Ali Sagir**

Head of Operational Department  
Turkish Coal Enterprises  
Hipodrom Cad. No: 12  
Yenimahalle  
Ankara 06330  
Turkey  
+90 532 655 9354  
sagira@tki.gov.tr

**\*Sahika Yurek**

Project Manager  
Turkish Coal Enterprises  
TKI Hipodrom Cad. No:12  
Yenimahalle  
Ankara 06330  
Turkey  
+90 533 669 1916  
yureks@tki.gov.tr

### UKRAINE

**Volodymyr Agyeyev**

Director  
The "Respirator" Scientific Research Institute of  
Mine-Rescue Work and Fire Safety (NIIGD  
"Respirator")  
157 Artem Street  
Makeevka 86106  
Ukraine  
+380 62 311 3989  
niigd@ukrpost.ua, niigd@mail.ru

**Artur Ghazaryan**

General Director  
Green Way 2020  
Gusovsky Street 4a/15  
Kiev 01011  
Ukraine  
+380 50 311 2242  
gw2020info@gmail.com

**Sergii Iegorov**

Head of Department  
DTEK, LLC  
129v, Artema Street  
Donetsk 83001  
Ukraine  
+380 50 347 7586  
egorovsg@dtek.com

**Volodymyr Kasianov**

Director  
Eco-Alliance, LLC  
33 Vorovskoho Street  
Kiev 01054  
Ukraine  
+380 95 283 0706  
ecoalliance@ukr.net

## Annex 1- Coal Subcommittee Meeting Participants

### UKRAINE (CONTINUED)

#### **Volodymyr Kolomiyets**

Director  
Public Enterprise Mine Office  
"Yuzhnodonbasskaya 1 1"  
4 Magistralnaya Street  
Ugledar 85670  
Ukraine  
+380 62 736 4083  
ugnodon1@gmail.com

#### **Oleksii Kozlov**

Director General  
State Enterprise Coal Company  
"Krasnolimanskaya"  
Vorovskogo street, 55  
Krasnoarmeisk 85300  
Ukraine  
+380 50 367 1407  
info@shkl.com.ua

#### **Bogdan Lelyk**

General Director  
Tutkovsky Institute  
Dubrovytska Street, 28  
Kiev 04114  
Ukraine  
+380 44 426 9797  
office@nadragroup.com, b.lelyk@tutkovsky.com

#### **Mykhailo Nychypor**

General Director  
State Organization "Makiivuhol"  
2 Sovetskaya Street  
Makeevka, Donetsk 86102  
Ukraine  
+380 62 322 2402  
igor-byelyenkov@yandex.ru

#### **Orlova Olena**

Deputy General Director  
Geloni Investments  
Dubrovytska Street, 28  
Kiev 04114  
Ukraine  
+380 44 426 9797  
office@nadragroup.com

#### **\*Igor Yashchenko**

Deputy Director of the Department Head of  
Directorate  
Ministry of Energy and Coal Industry  
30 Khreshchatik Street  
Kiev 01601  
Ukraine  
+380 44 594 6568  
elena.fisak@mev.energy.gov.ua,  
safety@mev.energy.gov.ua

### UNITED KINGDOM

#### **Neil Butler**

Technical Director  
HEL-East Ltd.  
REC, Randall Way  
Retford DN22 7GR  
United Kingdom  
+44 7979 245 874  
nbutler@hel-east.com

#### **David Creedy**

Managing Director CMM&VAM  
Sindicatum Sustainable Resources  
391B Orchard Road  
15-02 Tower B Ngee Ann City  
Singapore 238874  
Singapore  
+86 10 58072588  
david.creedy@sindicatum.com



## Annex 1- Coal Subcommittee Meeting Participants

### UNITED KINGDOM (CONTINUED)

#### **Dougal Hogg**

Deputy Chief Engineer  
Heater Technology  
Howden Group Ltd.  
Old Govan Road  
Renfrew  
Glasgow PA4 8XJ  
United Kingdom  
+44 7717 652 953  
dougal.hogg@howden.com

### UNITED STATES

#### **Kemal Baris**

Research Scientist  
Virginia Center for Coal and Energy Research  
460 Turner Street, NW  
Suite 304  
Blacksburg, VA 24060  
United States  
+1 540 998 5287  
kemal@vt.edu

#### **◆Holly Cannon**

Environmental Scientist  
ERG  
14555 Avion Parkway  
Suite 200  
Chantilly, VA 20151  
United States  
+1 703 786 8038  
holly.cannon@erg.com

#### **David Bellack**

Senior Legal Counsel, EVP  
Aspen Skiing Company  
PO Box 1248  
Aspen, CO 81611  
United States  
+1 970 300 7161  
dbellack@aspensnowmass.com

#### **◆Michael Cote**

President  
Ruby Canyon Engineering  
743 Horizon Court  
Suite 385  
Grand Junction, CO 81506  
United States  
+1 970 241 9298  
mcote@rubycanyoneng.com

#### **◆Charlee Boger**

Environmental Scientist  
Raven Ridge Resources  
584 25 Road  
Grand Junction, CO 81505  
United States  
+1 970 256 2661  
cboger@ravenridge.com

#### **Chelsea Dobrzynski**

Product Analyst  
Cummins Power Generation  
3850 Victoria Street  
Shoreview, MN 55126  
United States  
+1 651 787 6510  
jq713@cummins.com,  
chelsea.dobrzynski@cummins.com

## Annex 1 –Coal Subcommittee Meeting Registrants

### UNITED STATES (CONTINUED)

**Meredydd Evans**

Senior Staff Scientist  
Pacific Northwest National Laboratory  
Joint Global Change Research Institute  
5825 University Research Court  
Suite 3500  
College Park, MD 20740  
United States  
+1 310 314 6739  
m.evans@pnnl.gov

**Michael Gallaher**

Director  
RTI International  
3040 Cornwallis Road  
Research Triangle Park, NC 27517  
United States  
+1 919 541 5935  
mpg@rti.org

**◆Mike Hager**

Vice President, Engineering  
MEGTEC Systems, Inc.  
830 Prosper Road  
De Pere, WI 54115  
United States  
+1 920 337 1579  
mhager@megtec.com

**Matt Jones**

Chief Financial Officer, Vice President  
Aspen Skiing Company  
PO Box 1248  
Aspen, CO 81612  
United States  
+1 970 300 7161  
mjones@aspensnowmass.com

**◆Jonathan Kelafant**

Senior Vice President  
Advanced Resources International, Inc.  
4501 Fairfax Drive  
Suite 910  
Arlington, VA 22203  
United States  
+1 703 528 8420  
jkelafant@adv-res.com

**\*Olayinka Ogunsola**

Program Manager  
U.S. Department of Energy (DOE)  
FE-32  
1000 Independence Ave, SW  
US Department of Energy  
Washington, DC, 20585  
United States  
+1-202-586-6743  
olayinka.ogunsola@hq.doe.gov

**◆Raymond Pilcher**

President  
Raven Ridge Res. Inc.  
584 25 Road  
Grand Junction, CO 81505  
United States  
+1-970-245-4088  
pilcher@ravenridge.com

**\*Felicia Ruiz**

U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW 6207J  
Washington, DC 20460  
United States  
+1-202-343-9129  
ruiz.felicia@epa.gov

**Pete Soot**

CMM Energy LLC  
333 S. State St. #V-133  
Lake Oswego, OR 97034  
United States  
+1-503-699-9836  
peet@cmmenergy.com

**◆Jim Stone**

Senior Manager  
Durr Systems, Inc  
40600 Plymouth Road  
Plymouth, MI 48170  
United States  
+1 630 443 0636  
james.stone@durrusa.com

\* Official Country Delegate

◆ Project Network

**Annex 1 –Coal Subcommittee Meeting Registrants**

**UNITED STATES (CONTINUED)**

**◆Clark Talkington**

Senior Consultant  
Advanced Resources International, Inc.  
4501 Fairfax Drive  
Suite 910  
Arlington, VA 22203  
United States  
+1 703 528 8420  
ctalkington@adv-res.com

**Thomas Vessels**

President  
Vessels Coal Gas, Inc.  
730 17th Street  
Suite 340  
Denver, CO 80202  
United States  
+1 303 534 0488  
tvessels@vesselscoalgas.com

## Annex 2 – Coal Subcommittee Meeting Agenda



### GLOBAL METHANE INITIATIVE COAL SUBCOMMITTEE MEETING FINAL AGENDA

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**Held during Methane Expo 2013  
Vancouver Convention Centre, Vancouver, Canada  
13 March 2013, 2:00pm**

- 2:00 pm      **Welcome Addresses**
- Co-Chair Felicia Ruiz (USA), Co-Chair Huang Shengchu (China), and Co-Chair A.K. Debnath (India)
  - Brief introductions of all meeting participants
  - Adoption of agenda
- 2:30 pm      **Policy Session**  
*Moderator: Clark Talkington, Advanced Resources International*
- Policies and Programs to Address Fugitive Emissions from Coal Mining in Australia: *Bruce Murphy, Australia Department of Resources, Energy and Tourism*
  - Current Situation of Development and Utilization of Coal Mine Methane and Potential During 12<sup>th</sup> Five-Year Plan in China: *Huang Shengchu, China Coal Information Institute (CCII)*
  - Development of Coal Mine Methane in India: Opportunities & Challenges: *B.N. Prasad, Central Mine Planning & Design Institute (CMPDI)*
- 3:45 pm      **Coffee/Tea Break**
- 4:15 pm      **Partner Country and Project Network Updates**
- *China*
  - *India*
  - *Mongolia*
  - *Poland*
  - *Turkey*
  - *Ukraine*
  - *United States*
  - *UNECE Ad Hoc Group of Experts on CMM*
- 5:45 pm      **Action Items and Review**  
*Co-Chair Felicia Ruiz (United States)*
- Country-specific Action Plans
  - Coal Subcommittee Action Plan
  - Updates to the Coal Mine Methane Technology Database
  - International Coal Mine Methane Project Database
  - Next Coal Subcommittee meeting
  - Upcoming coal-related conferences/workshops
- 6:15 pm      **Adjourn**