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COMMITTEE ON SUSTAINABLE ENERGY

Ad Hoc Group of Experts on Coal Mine Methane

Fifth session
Geneva, 12-13 October 2009

**REPORT OF THE AD HOC GROUP OF EXPERTS ON COAL MINE METHANE
ON ITS FIFTH SESSION**

I. INTRODUCTION

1. The fifth session of the Ad Hoc Group of Experts on Coal Mine Methane was held from 12 to 13 October 2009. Additional background information and details on the items summarized in the report are available on the ECE website at:
<http://www.unece.org/energy/se/docs/cmm5.html>

II. ATTENDANCE

2. The session was attended by representatives of the following ECE member countries: Austria, Germany, Poland, Russian Federation, Spain, Sweden, Ukraine, United Kingdom of Great Britain and Northern Ireland, and United States of America. Representatives of the following countries participated under article 11 of the Commission's terms of reference: Australia, China, India and South Africa.

3. The session was attended by representatives of the European Community, International Labour Organization (ILO) and the World Bank.

4. The World Coal Institute and Methane to Markets Partnership were also represented.

III. ADOPTION OF THE AGENDA

(Agenda item 1)

Documentation: ECE/ENERGY/GE.4/2009/1

5. The provisional agenda was adopted without amendment.

IV. OPENING SESSION

(Agenda item 2)

6. The Chairman of the Ad Hoc Group of Experts on Coal Mine Methane, Mr. R. C. Pilcher, welcomed the participants and made a few opening comments addressing the work of the group. He remarked that since its inception in 2004, the Group of Experts had been continuously fulfilling its mandate by encouraging the development of coal mine methane projects. The Group had adopted an approach that communicated the economic advantages of developing coal mine methane projects while emphasizing safe practices. Benefits resulting from coal mine methane utilization projects accrue to the mine owners and operators, thereby creating a circle of interdependent actions that provide added income, increase mine safety and reduce emission of methane to the atmosphere. The Chairman reported that, as a result of the decision taken at the fourth session to publish a best practices guidance for recovery and use of coal mine methane, a group of international experts had submitted a draft of the guidance document to the project's steering committee. The Chairman welcomed the Methane to Markets coal subcommittee (agenda item 3). He remarked that the activities of the Ad Hoc Group of Experts and Methane to Markets Partnership were complementary and continued cooperation was warranted.

V. METHANE TO MARKET (M2M) SUB-COMMITTEE

(Agenda item 3)

7. The meeting received an update on the activities of the Methane to Markets (M2M) Partnership, Coal Sub-Committee, including a summary of the M2M Steering Committee meeting held in Monterrey, Mexico in January 2009. The Ad Hoc Group of Experts has enjoyed a strong cooperative partnership with the M2M Coal Sub-Committee since the establishment of both initiatives in 2004.

8. The Methane to Markets Chairperson and Vice-Chairpersons informed the meeting about the 2010 Expo event, to be held on 2-5 March 2010 in New Delhi, India, focusing on all four methane sectors covered by the Partnership. Preparations are underway for the sector-specific technical and policy sessions at this event as well as for displays of project opportunities and technologies. The Chairperson of the M2M meeting engaged partner country delegates and private sector representatives about the topics to be discussed and project opportunities to be showcased at the 2010 Expo. The Ad Hoc Group of Experts welcomed and encouraged this forthcoming important event.

**VI. ACTIVITIES AND PRIORITIES OF THE COMMITTEE ON SUSTAINABLE
ENERGY AND ANY MATTERS FOR CONSIDERATION BY THE
AD HOC GROUP OF EXPERTS**

(Agenda item 4)

Documentation: ECE/ENERGY/78.

9. The Director of the Sustainable Energy Division introduced this agenda item. He underlined that by 2020, a total of 793 million tonnes carbon dioxide equivalent of gas could be emitted from coal mines, over 95 per cent of which would come from underground mines. He stated that there was a great deal of interest and anticipation in governments, industry and the general public for the forthcoming United Nations Climate Change Conference in Copenhagen in December. The work of the Ad Hoc Group of Experts already contributed to climate change mitigation and it would continue to do so in the years ahead. Under the auspices of the Committee on Sustainable Energy, the Ad Hoc Group of Experts activities are aimed at the recovery and safe utilization of coal mine methane making it a most attractive feature of sustainable energy policy that is both economically and environmentally efficient. It is the cost-effective nature of use of coal mine methane that makes it one of the most appealing methods of reducing greenhouse gas emissions. Together with energy efficiency, such self-financing policies for climate change mitigation may actually cost the global economy very little.

10. The Director stated that at its seventeenth session in November 2008, the Committee on Sustainable Energy endorsed the requests by the Ad Hoc Group of Experts on Coal Mine Methane for the renewal of its mandates for a further two years, through to December 2010. He briefed the meeting about the outcomes of the seventeenth session of the Committee on Sustainable Energy which focused the energy security dialogue on "Strategic Alliances for Energy Security", in particular on the cooperation and relationship between international oil companies and national oil companies on energy security strategies. Furthermore, the important feature of the Committee's work was that it had shown an emerging convergence of sustainable energy and energy security policies. Coal mine methane clearly fitted into this category.

VII. REVIEW OF THE PROGRAMME OF WORK FOR 2008/2009

(Agenda item 5)

Documentation: ECE/ENERGY/GE.4/2007/2, ECE/ENERGY/GE.4/2008/3;
ECE/ENERGY/GE.4/2008/4

11. The Chairman reviewed progress on the programme of work for 2008/2009 adopted at the fourth session of the Ad Hoc Group of Experts.

(a) Documents/publications: At its third session, the Ad Hoc Group of Experts agreed to develop a glossary of terms in common use throughout the global CMM industry as a reasonable starting point for a longer-term goal of harmonizing terminology and technical standards in the industry. The effort to develop the glossary also supported a commitment by the Ad Hoc Group of Experts to support development of uniform technical standards and terminology within the Methane to Markets Partnership. The Glossary of CMM terminology is

available in English, French and Russian on the ECE website. It will be reviewed on a regular basis and updated as needed.

(b) Workshops, conference: The Secretary and Bureau of the Ad Hoc Group of Experts participated in the Eighth International Symposium on CBM/CMM and Carbon Trading in China and the International Workshop on Mine Methane Emission Reduction in Beijing in December 2008.

(c) Recovery and use of CMM: The Ad Hoc Group of Experts surveyed coal mining countries to determine if legislation might act as a barrier to best practices in the recovery and use of CMM. It also further investigated the technical options for using low-quality coal mine methane because of its health and safety hazards, and also because of its energy resource potential in many ECE countries.

(d) Cooperation with the Methane to Markets Partnership, United States Environmental Protection Agency (US EPA) and World Coal Institute: The Ad Hoc Group of Experts initiated a draft guide on best practices for recovery and use of CMM. Also as a follow-up to the Final Technical Report to the US EPA Grant, it drew the lessons learned in grant implementation, including financing CMM projects.

(e) Activities with respect to mine safety: The Ad Hoc Group of Experts supported the Best Practices Guidance Project with the goal of developing a focused strategy for promoting the economic benefits of mine safety improvements.

VIII. ACTIVITIES OF THE AD HOC GROUP OF EXPERTS WITH RESPECT TO MINE SAFETY

(Agenda item 6)

Documentation: ECE/ENERGY/GE.4/2009/3

12. The Ad Hoc Group of Experts agreed at its third session in 2007 that the global coal mining industry lacked a set of recommended principles and standards to guide mine operators, regulators, government officials and technical professionals in more effectively managing their methane problems, especially in emerging economies. At its fourth session in 2008 it agreed to develop the “Best practice guidance for effective methane drainage and use at coal mines”.

13. The meeting was briefed on how the guidance was conceived by a Steering Committee composed of representatives from the three sponsoring organizations supporting the initiative – Methane to Markets Partnership, ECE and World Coal Institute – and private industry, which provided direction and overall vision for the project as well as feedback during the development process. He explained that the document had been drafted by a Technical Experts Panel consisting of globally renowned experts in underground ventilation and methane drainage at coal mines and reviewed by a small panel of industry experts, known as the Stakeholders Advisory Group, from key coal mining countries and organizations globally. The document will receive a formal technical peer review process by the Technical Peer Review Group before being finalized.

14. The meeting expressed strong support for the draft document and suggested some improvements. The delegation of China said that the document would support the Chinese

Government's efforts to discourage the use of low concentration methane. The representative of the World Bank suggested setting up a parallel website: developing countries and emerging economies depended heavily on the website as more cost and time effective.

15. The representative of ILO suggested that the issue of outside contractors working on mine property should be addressed. He also mentioned that the document dovetailed nicely with the ILO Code of Practice on Underground Coal Mining while adding important detail and further guidance, and that ILO would circulate the final document to its constituencies.

16. It was noted that more (web-based) references to legislation, regulations and policy should be incorporated. Also the specific target audience should be better defined as to ensure that the document was more effective. More illustrations, diagrams and figures would be added to effectively illustrate the points made in the text and the existing illustrations needed improvement. The economic section was challenging and could be streamlined; moreover, the costs noted in the commercial section were true for developed countries but might not be for emerging economies and – as costs can change quickly – a web-based reference should be easily updated on a regular basis.

17. Participants said that case studies were good, but additional and more detailed case studies should be included eventually on the website, especially a Ventilation Air Methane case study. Also it was necessary to address best practice for regulatory frameworks including appropriate roles and responsibilities as projects often suffer from overlapping or ill-defined jurisdictions. An effective global outreach and education campaign was critical and a strong plan should be developed alongside the development of the document, but significant resources would be required for an effective outreach campaign. It was also considered important to publish a summary of the final documents for policy/decision-makers.

18. Finally, it was stated that the Best Practice Guidance document was not intended to replace existing technical and detailed treatises on the topics of gas capture and utilization. Instead, it was meant to complement them by providing a general guidance source for a wider audience of stakeholders. The contributors to this project gave their time freely and willingly in the desire to promote increased safety in coal mining. In the light of recent accidents and in memory of all the fatalities of the past, the authors express the hope that this document would contribute to increasingly safer coal mining operations.

IX. STATUS OF COAL MINE METHANE AND CARBON MARKETS

(Agenda item 7)

19. The meeting received the following presentations:

- (a) Near-Zero Methane Emissions Coal Mining in China: the "Duerping Story";
- (b) Coal Mine Methane Activities in Poland;
- (c) European Commission Activities on Coal Bed Methane and Coal Mine Methane;
- (d) Problems of Estimation and Industrial Evaluation of Reserves and Resources of Coal Bed Methane;
- (e) Mine Methane as Source of Innovations in the Ukrainian Coal Industry;
- (f) Coal Mine Methane in Ukraine;

- (g) Australian Coal Mine Methane Activities;
- (h) Optimization of the Recovery and Use of Coal Mine Methane to Promote Mine Safety, Greenhouse Gas Mitigation and Sustainable Development.

20. Presentations provided to the secretariat are available on the ECE website (<http://www.unece.org/energy/se/docs/cmm5.html>).

X. NEW DEVELOPMENTS IN COAL MINE METHANE AND VENTILATION AIR METHANE TECHNOLOGIES

(Agenda item 8)

21. The meeting received a presentation by an Expert from Sweden on “Ventilation Air Methane (VAM) processing: its impact on climate change”. It was explained that the lack of political decisions on post 2012 rules was depressing global prices of carbon credits, making investors hesitate with investment decisions. He stated that CO₂ stayed forever in the atmosphere, therefore, major CO₂ emissions must be avoided by introducing new technology or by sequestering it into the ground.

22. A presentation by an expert from United Kingdom on “New VAM Technologies” underlined that the Single Market Leader for Power Generation had no real competition, that adaption of VAM technologies to allow hot water production was relatively simple and cheap, while steam recovery was more expensive.

23. A presentation by an expert from Germany on “Hazard - Emission - Source of Energy Services for GHG Mitigation Projects” described the history of CMM use in Europe and underlined possibilities for mitigation if greenhouse gas emissions related to active and abandoned coal mines.

XI. ACTIVITIES OF AND COOPERATION WITH VARIOUS INTERGOVERNMENTAL BODIES AND NON-GOVERNMENTAL ORGANIZATIONS AND OTHER RELATED BODIES

(Agenda item 9)

24. The representative of ILO briefed the meeting about the ILO convention N. 176 (C.176) adopted in 1995, in force since 1998, and ratified by 22 countries. In 2006, ILO revised and adopted a new code of practice on safety and health in underground coalmines which provides important practical guidance in support of the provisions of the Safety and Health in Mines Convention (C.176).

25. A presentation by the Secretary of the ECE Working Party on Regulatory Cooperation and Standardization Policies (WP.6) stated that explosions in mines might be caused by a variety of hazards; using safe equipment would therefore reduce the risk of an explosion causing casualties or substantial damage. The Working Party had developed a common regulatory framework for the equipment of the explosive environment sector which contained provisions concerning products specifications and means of establishing conformity with these specifications. The choice instrument was the International Electro-technical Commission (IEC) System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres

(IECEEx) system. IECEEx is being used in the mining sector in a number of countries: the Australian mining authorities recognize IECEEx certificates in their regulations.

26. The Ad Hoc Group Experts will continue the cooperation with other international and intergovernmental organizations, including ILO, World Bank, World Coal Institute and the Methane to Markets (M2M) Partnership.

XII. PROGRAMME OF WORK FOR 2009-2010

(Agenda item 10)

27. After discussion, the Ad Hoc Group of Experts:

(a) *Welcomed and supported* the first draft of the "Best Practices Guidance for Effective Methane Drainage and Use at Coal Mines" cooperative project with the goal of developing a focused strategy for promoting the economic benefits of mine safety improvements;

(b) *Expressed appreciation* for the opportunity to cooperate with the Methane to Markets Partnership and the World Coal Institute on the project "Best Practices Guidance for Effective Methane Drainage and Use at Coal Mines";

(c) *Reiterated* the decision of the fourth session to further investigate the technical options for using of low-quality coal mine methane because of its health and safety hazards, and also because of its energy resource potential in many ECE countries;

(d) *Requested* the secretariat to publish the "Best Practices Guidance for Effective Methane Drainage and Use at Coal Mines" under the ECE Energy Series and officially present it during the Methane to Market Expo in India, in March 2010;

(e) *Requested* the secretariat to publish the summary of the "Best Practices Guidance for Effective Methane Drainage and Use at Coal Mines" to be distributed to policy/decision-makers;

(f) *Reiterated* the decision of the fourth session to assess whether regulatory requirements are inhibiting innovation in methane capture and utilization with the goal of preparing a briefing paper on possible problems with existing regulatory requirements;

(g) *Acknowledged* the preparation and translation of the draft Glossary of Coal Mine Methane Terms and Definitions (ECE/ENERGY/GE.4/2008/3), potentially to be issued as an ECE publication;

(h) *Welcomed* the continued cooperation with other international and intergovernmental organizations, including the International Labour Organization, United Nations Development Programme, World Coal Institute and the Methane to Markets (M2M) Partnership;

(i) *Requested* the secretariat and the Bureau to develop a strategy for increasing participation by the coal mining industry in the future activities of the Ad Hoc Group of Experts.

XIII. OTHER BUSINESS

(Agenda item 11)

28. For the future success of the Ad Hoc Group of Experts, it was considered essential that the meetings take place with substantial participation and contributions from the coal sector. The Ad Hoc Group of Experts requested that the Bureau and the secretariat consider and pursue options for increasing participation.

29. The meeting requested the secretariat to issue in future as official documents in the three ECE working languages all relevant documents for its work such as agendas, reports, programme of work, calendar of meetings, questionnaires, terms of reference, progress reports and final reports of its ongoing activities, studies and surveys as well as any other documents deemed important for the work of the Ad Hoc Group of Experts, including all those considered during the fifth session. In case of need, the secretariat should remain in close contact with the Bureau of the Ad Hoc Group of Experts on this key matter.

XIV. ADOPTION OF THE REPORT OF THE MEETING

(Agenda item 12)

30. It was agreed that a concise report of the session focusing on the conclusions and recommendations would be prepared by the secretariat and circulated to the Bureau of the Meeting for approval, upon which it would be circulated to member countries.
