



Coal Mine Methane as a Valuable Energy Source

XXVIII School of Underground Mining

27 February 2019, Cracow, Poland





Housekeeping

ENERGY



Housekeeping and Introduction to the Workshop

Mr. Michał Drabik

Economic Affairs Officer, United Nations Economic Commission for Europe (UNECE)



Housekeeping

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- Agenda at the entrance
- Presentations will be on the web at <https://www.unece.org/index.php?id=51165>
- Meeting times 10:00-14:10 & 15:10 -18:05
- Lunch break 14:10 -15:10.
- Coffee breaks outside of meeting room:
 - 11:40 - 12:00, and
 - 16:25 - 16:45
- Room not locked.
- Please be on time.
- Interpretation (Polish, English, Spanish), ear pieces, microphones
- Please speak slowly and clearly



Timetable (1)

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- **Opening Part (10:00 - 10:10)**
 - Housekeeping and Introduction to the Workshop
 - Opening Speech
- **Case Study of Colombia (10:10 - 11:40)**
 - Estimating CBM Resources in Colombia
 - Overview of the Colombian Mining Sector
 - Private Sector Challenges due to Methane Emanations during Underground Coal Exploitation
 - Environmental Matters Preventing Developments of CBM/CMM Projects
 - Foreign Experience of Working on CMM Projects in Colombia
 - Security Challenges in Colombian Mines
- **Coffee Break (11:40 - 12:00)**
- **International Experience Part I (12:00 - 13:30)**
 - Polish Regulatory Framework on CBM/CMM; Estimating CMM Resources in Poland
 - Estimating CMM Resources in the US
 - Efficiency of Capturing Methane during Mining Exploitation in Poland
 - Polish Mine Safety Regulations
 - Overview of Ventilation Characteristics, Practices, and Regulations in Poland
 - Hybrid Underground Installation for Energy Processing and Recovering from Ventilation Air Methane Combustion
 - Overview of Ventilation Characteristics, Practices, and Regulations in the US



Timetable (2)

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Signing of a Cooperation Agreement between PGNiG and PGG for Implementation of the Geo-Metan Project

(13:30 - 14:10)

- **Geometan Project - Presentation**
 - Mr. Janusz Jureczka, *Director, Upper Silesian Branch, PIG-PIB*
- **Introduction to the Agreement between PGNiG and PGG**
 - Mr. Piotr Woźniak, *President, PGNiG*
 - Mr. Piotr Bojarski, *Vice-President, PGG*
- **Signing of the Agreement between PGNiG and PGG**
 - Mr. Piotr Woźniak, Mr. Łukasz Kroplewski, *PGNiG*
 - Mr. Piotr Bojarski, Mr. Andrzej Paniczek, *PGG*
- **Press Conference**



Timetable (3)

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- Lunch Break (14:10 - 15:10)
- **International Experience Part II (15:10 - 16:10)**
 - Policies that Provide a Solid Foundation for the Development of CMM/AMM and VAM Projects
 - The Economics of Successful Project Development
 - Gilowice Project as a First Step to Develop Pre-Mine Drainage Technology in Poland
 - CBM Gilowice Project – Applied Fracturing Technology, and the Obtained Results
 - CMM and Climate Mitigation
- Coffee Break (16:25 - 16:45)
- **Presentation of the CMM/CBM Equipment (16:45 - 18:00)**
 - Strata Mechanics Research Institute of the Polish Academy of Science
 - Micon
 - Carboautomatyka S.A.
 - EXME Berger Group
 - Horus Energia
- **Closing Remarks (18:00 - 18:05)**
- **End of Workshop (18:05)**



Opening Part

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Opening Speech

Mr. Łukasz Kroplewski

Vice-President, Polish Oil and Gas Company (PGNiG)



Colombia – Case Study (1)

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Is There Methane Gas Potential in Colombia? SGC Experience in Estimating CBM resources in the Country

Mr. Marco Rincon, Geologist, Colombian Geological Survey (SGC)

Current state of the Colombian Mining Sector and the Strategy for its Future Development

Ms. Gloria Catalina Gheorghe, Mine Safety and Rescue Manager, National Mining Agency (ANM)

Challenges Faced by Mining Licence Holders due to Methane Emanations during Underground Coal Mining Exploitation; A Case Study of Colombiana de Minerales

Ms. Katerine Avila Acero, Operational Manager, Colombiana de Minerales



Colombia – Case Study (2)

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Obstacles to Development of the CBM Projects in Colombia Related to the Environmental Concerns of the Local Communities

Mr. Marco Rincon, *Geologist, SGC*

Foreign Experience of Developing CMM Projects in Colombia

Mr. James Marshall, *Vice-President, Raven Ridge Resources Inc.*

Security Challenges in Colombian Mines; Overview of Regulations Pertaining to the Mine Safety and Explosion Prevention

Ms. Gloria Catalina Gheorghe, *Mine Safety and Rescue Manager, ANM*



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COFFEE BREAK

11:40 - 12:00





International Experience (1)

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Polish Regulatory Framework on CMM/CBM; Estimating CMM Resources and Reserves – Polish Experience

Mr. Jerzy Hadro, Mr. Janusz Jureczka, Upper Silesian Branch, Polish Geological Institute - National Research Institute (PIG-PIB)

Estimating CMM Resources and Converting them to Reserves – US Experience

Mr. James Marshall, Vice-President, Raven Ridge Resources Inc.

The Efficiency of Capturing Methane During Mining Exploitation in Polish Conditions

Mr. Marek Borowski, Vice Dean, Faculty of Mining and Geoengineering, AGH University of Science and Technology



International Experience (2)

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Polish Mine Safety Regulations Concerning Methane Hazard Prevention

Mr. Henryk Koptoń, Mr. Arnold Przystolik, GIG - Central Mining Institute

Overview of Ventilation Characteristics, Practices, and Regulations in Poland

Mr. Eugeniusz Krause, Mr. Jacek Skiba, Mr. Bartłomiej Jura, GIG - Central Mining Institute

Hybrid Underground Installation for Energy Processing and Recovering from Ventilation Air Methane Combustion in Mine Workings for Their Further Air Conditioning

Ms. Joanna Łojewska, Faculty of Chemistry, Jagiellonian University

Overview of Ventilation Characteristics, Practices, and Regulations in the US

Mr. James Marshall, Vice-President, Raven Ridge Resources Inc.



International Experience (3)

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 - Mr. Piotr Bojarski, Mr. Andrzej Paniczek, *PGG*
- **Press Conference**



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LUNCH BREAK

14:10-15:10





International Experience (4)

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Getting it Right: Policies that Provide a Solid Foundation for the Development of CMM/AMM and VAM Projects

Ms. Evans, Senior Staff Scientist, Joint Global Change Research Institute, Pacific Northwest National Laboratory (PNNL)

The Economics of Successful Project Development

Mr. Phil Kong, Analyst, ARI

Gilowice Project as a First Step to Develop Pre-Mine Drainage Technology in Poland – update on activities, review of the latest results

Mr. Janusz Jureczka, Mr. Jerzy Hadro, Upper Silesian Branch, PIG-PIB

Mr. Łukasz Kroplewski, Vice- President, PGNiG, President, ICE-CMM in Poland



International Experience (5)

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CBM Gilowice Project – Applied Fracturing Technology, and the Obtained Results

Mr. Piotr Kasza, Head, Reservoir Stimulation Department, Oil and Gas Institute - National Research Institute

Mr. Janusz Jureczka, Director, Upper Silesian Branch, PIG-PIB

Mr. Łukasz Kroplewski, Vice- President, PGNiG, President, ICE-CMM in Poland

Strategic Role of CMM in Climate Change Mitigation; US Policies Affecting CMM Capture and Use

Mr. Phil Kong, Analyst, Advanced Resources International (ARI)



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COFFEE BREAK

16:25-16:45





Equipment Presentation

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Strata Mechanics Research Institute of the Polish Academy of Science

"New measurement devices for ventilation methane content monitoring"

Mr. Janusz Kruczkowski, Mr. Piotr Ostrogórski

Micon

Mr. Stefan Rygulski

Carboautomatyka S.A.

Mr. Wojciech Anders

EXME Berger Group

Mr. Marcin Krawczyk

Horus Energia

Mr. Maciej Ziółkowski



Closing Remarks

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Mr. Łukasz Kroplewski

Vice-President, PGNiG

Mr. Michał Drabik

Economic Affairs Officer, UNECE



Contact Information

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Thank you!

Sustainable Energy Division

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Date 27 | 02 | 2019, Cracow, Poland

