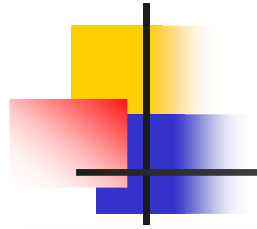


# **COAL MINE METHANE UTILIZATION IN UKRAINE: POTENTIAL AND BARRIERS**



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**AGENCY FOR RATIONAL ENERGY USE AND ECOLOGY**

**4th Session of the UNECE Ad Hoc Group of Experts on  
Coal Mine Methane**

**Geneva, 16-17 October 2008**

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## **COALBED METHANE OUTREACH PROGRAM (US EPA)**

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***Project:* Address Barriers to CMM Project Development in Ukraine  
(09/ 2008-06/ 2009)**

***Developers:* Battelle/PNNL (US) and ARENA-ECO (Ukraine)**

**Project aimed at involving key stakeholders in the process of creating an attractive legal and economic environment for boosting CMM utilization**

### **Tasks:**

- **Analysis of international “best practices”**
- **Analysis of existing conditions and barriers in Ukraine and development of recommendations**
- **Stakeholder engagement through training and assistance**
- **Development of mine profiles for the Handbook**



## CMM IN UKRAINE – KEY STATISTICS

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- **Estimated coal reserves (2003) – 34000 million tones, global rank – 7, global share – 3.8%;**
- **Coal production (2007) – 75.4 million tones, global rank – 11, global share – 1.5%;**
- **Methane Emissions from Coal Mining (2006) - 29 million tones CO<sub>2</sub>e, global rank – 4;**
- **Coal Mine Methane Emissions Avoided (2001) - 1.9 million tones CO<sub>2</sub>e.**

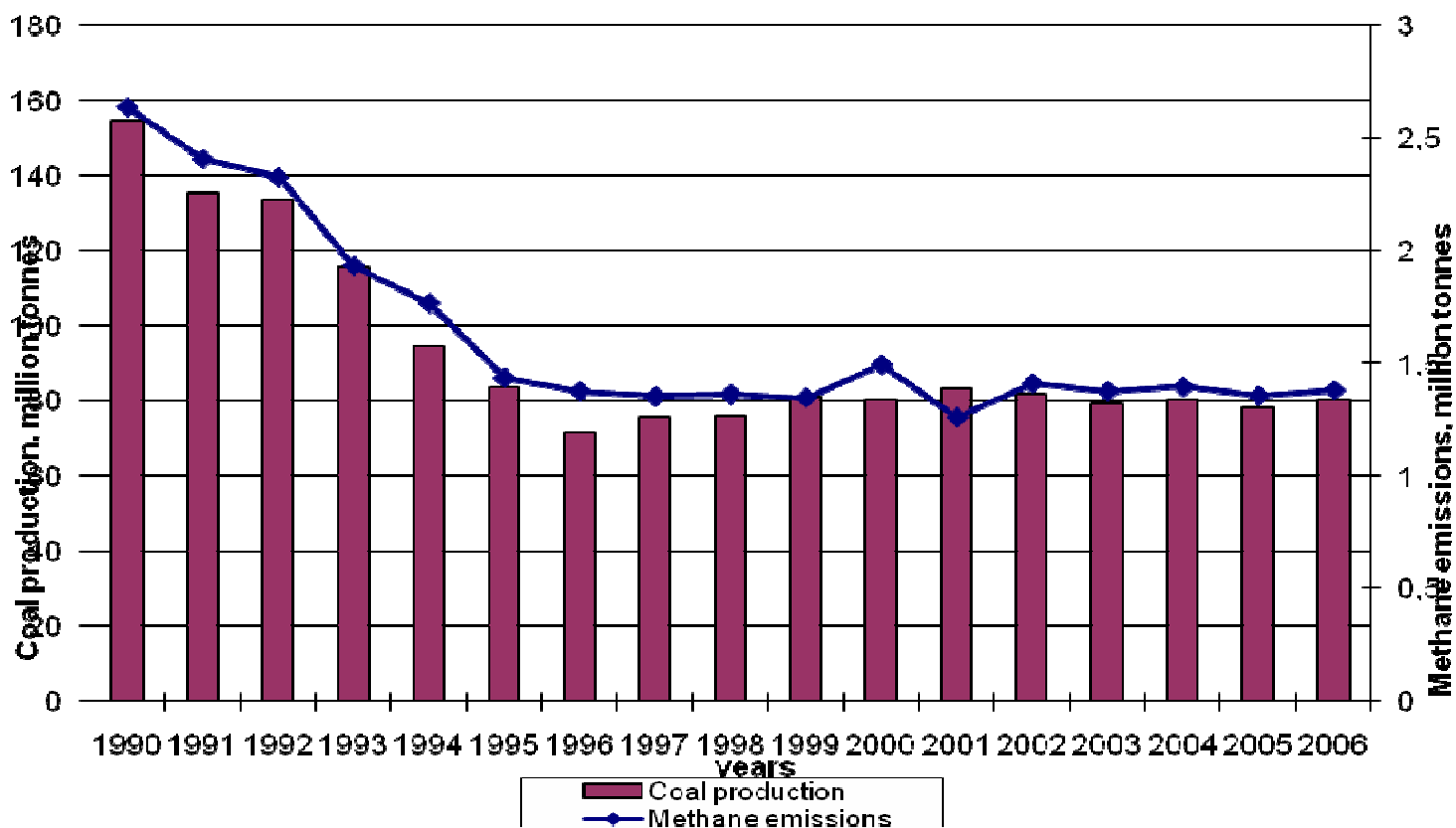
## OVERVIEW FOR KEY CATEGORIES OF GHG EMISSIONS (2006)

Key categories	Gas	GHG emissions, million tones of CO <sub>2</sub> -e	Share of total emissions, %
Fuel combustion activities	CO <sub>2</sub>	201.5	38.9
Iron and steel production	CO <sub>2</sub>	61.2	11.8
Forestry	CO <sub>2</sub>	46.7	9.0
<b>Coal mining and handling</b>	<b>CH<sub>4</sub></b>	<b>29.0</b>	<b>5.6</b>
Road transportation	CO <sub>2</sub>	28.0	7.1
Natural gas leaks	CH <sub>4</sub>	23.7	4.6
...	...	...	...

Source: Greenhouse Gas Inventory of Ukraine (2008)

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# COAL PRODUCTION AND FUGITIVE METHANE EMISSIONS FROM COAL MINING AND HANDLING



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## PROGRAMS RELATED TO CMM IN UKRAINE

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- **National Energy Strategy of Ukraine till 2030 (2006)**
- **Concept of coal industry development (2008)**
- **Comprehensive State Energy Saving Program (last edition 2000)**
- **Methane utilization program till 2020 (under development);**

## COALBED METHANE RECOVERY AND UTILIZATION

Million tons of oil equivalent

Scenario	2010	2015	2020	2025	2030
Pessimistic	0,5	1,2	1,6	1,9	2,2
Base	0,9	2,0	2,7	3,2	3,6
Optimistic	1,3	2,8	3,8	4,5	5,0

Source: National Energy Strategy of Ukraine till 2030



## LEGISLATION RELATED TO CMM IN UKRAINE

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- **Law On Alternative Types of Liquid And Gas Fuels (2000)**
- **Law on Green Power Tariff (2008)**
- **Law on Coal Mine Methane (draft 2005)**

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## LEGAL, REGULATORY AND INSTITUTIONAL BARRIERS

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### Lack of :

- **Clarity about ownership of the gas**
- **Certainty in the permitting process**
- **Policy framework for the promotion of CMM utilization**
- **Coordination and communication between numerous stakeholders**



## MARKET AND INVESTMENT BARRIERS

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- **The continuing trend of declining coal production**
- **Lack of investment capital for high-capital projects**
- **Lack of economic and financial incentives**
- **High risks and failure rates of project development and implementation**
- **Electricity market prices often are too low to make investments in CMM commercially attractive**
- **Insufficient financial position of majority mines.**

A decorative graphic consisting of overlapping colored squares (yellow, red, blue) and a black crosshair.

## TECHNICAL BARRIERS

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### Lack of:

- **Widespread deployment of modern technologies**
- **Training to operate such technologies**
- **Demonstrated, economically attractive technology for recovery or use of low grade CMM**
- **Appropriate infrastructure for CMM processing, transmission and utilization**



## INFORMATIONAL/EDUCATIONAL BARRIERS

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### **Lack of:**

- **Knowledge about international experience and achievements in CMM;**
- **Information about advanced relevant technologies;**
- **Informational and educational programs and centres on CMM.**



## **CMM MARKET DEVELOPMENT**

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- **Joint Implementation**
- **Green Investment scheme**
- **Establishment of the Centre for Alternative Fuels**
- **Research and development**



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# THANK YOU FOR ATTENTION!

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