



**Economic and Social  
Council**

Distr.  
GENERAL

ECE/ENERGY/GE.4/2007/4  
14 December 2006

Original: ENGLISH

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**ECONOMIC COMMISSION FOR EUROPE**

**COMMITTEE ON SUSTAINABLE ENERGY**

Ad Hoc Group of Experts on Coal Mine Methane

Third session

Geneva, 7-9 March 2007

Item 6 of the provisional agenda

**UPDATE ON THE STATUS AND ACTIVITIES OF THE TASK FORCE ON THE  
ECONOMIC BENEFITS OF IMPROVING MINE SAFETY THROUGH THE  
EXTRACTION AND USE OF COAL MINE METHANE**

**DRAFT TEMPLATE FOR CASE STUDIES ON METHANE DEGASIFICATION SYSTEMS**

Prepared by the Chairman of the Task Force on the Economic Benefits of Improving  
Mine Safety through the Extraction and Use of Coal Mine Methane

**INTRODUCTION**

1. The draft template was presented to the Task Force for review and consideration at an informal meeting on 30 January 2006. The template is intended to provide general direction to those members of the Task Force and others in the coal industry who wish to undertake case studies of successful and unsuccessful methane degasification programmes at coal mines anywhere in the world. The case studies will serve as a foundation for the development of best practices to improve mine safety through more effective methane drainage while also encouraging increased coal mine methane (CMM) utilization. The Task Force and the Ad Hoc Group of Experts on Coal Mine Methane, to which the Task Force reports, plan to work closely with United Nations member governments and the coal industry to promote best practices and demonstrate the clear linkage between improved mine safety and mine profitability.

2. The Bureau of the Task Force intends to prepare at least two case studies utilizing the template and to present these case studies to the third session of the Ad Hoc Group of Experts on Coal Mine Methane.

3. The template attempts to address the salient points in preparing a case study but is by no means a definitive list. It is simply meant as a guide, and authors/sponsors of case studies are encouraged to provide additional information if they believe that such information would be of value. Likewise, the template is not the only option for preparing informative case studies; however, the Bureau of the Task Force encourages its use to provide consistency across case studies.

### **DRAFT TEMPLATE FOR CASE STUDIES**

#### **(a) General Mine Information:**

- (i) Mine Name
- (ii) Current Owner
- (iii) Status
- (iv) Location
- (v) Country
- (vi) Basin/Region
- (vii) Mine Information
- (viii) Year of Initial Production
- (ix) Number of Employees
- (x) Mining Method
- (xi) Depth to Seam (m)
- (xii) Preparation Plant on Site
- (xiii) Coal Resource Information
- (xiv) Names of Coal Seams Mined
- (xv) Seam Thickness (m)
- (xvi) Sulphur Content of Coal Produced
- (xvii) Heating Value of Coal
- (xviii) Type of Coal and Primary Market
- (xix) Reserves Remaining and Life Expectancy of the Mine

**(b) Production, Ventilation and Drainage Data:**

**Table 1: Production, ventilation and drainage data for the most recent 5 years for which data is available**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>Coal Production (thousands metric tons/year)</b>					
<b>Coal Sales (thousands metric tons/year)</b>					
<b>Estimated Total Methane Liberated (thousands m<sup>3</sup>/day)</b>					
<b>Emission from Ventilation Systems: (thousands m<sup>3</sup>/day)</b>					
<b>Estimated Methane Drained (thousands m<sup>3</sup>/day)</b>					
<b>Estimated Specific Emissions (m<sup>3</sup>/ton)</b>					
<b>Methane Recovered (thousands m<sup>3</sup>/day)</b>					

**(c) Safety Information:**

- (i) What are the major safety issues at this mine?
- (ii) Are they methane related?
- (iii) Are they coal-dust related?
- (iv) Is coal being mined prone to spontaneous combustion?

**(d) Information on mine-related accidents:**

- (i) How many serious accidents has the mine had in the last ten years?
- (ii) How many serious injuries resulted from each accident?
- (iii) How many fatalities resulted from each accident?

**(e) For each serious accident, estimate the cost of serious injuries and fatalities:**

- (i) Were there fines or legal penalties associated with the accident?
- (ii) If so, estimate the magnitude of the penalties.
- (iii) Estimate the cost of the legal or civil settlements arising from the injuries or fatalities.
- (iv) Were there other known economic impacts arising from the accident, i.e. decrease in ability to finance capital improvements or radical changes in costs of insurance?

**(f) Estimated economic losses associated with suspending production or closing the mine:**

- (i) If production was suspended for some time, what is the estimated economic value of the lost coal production?
- (ii) If the mine was permanently closed, what is the economic loss associated with the inability to produce the remaining coal reserves?
- (iii) What is the estimated capital investment that was lost by abandoning the mine facility?
- (iv) Could the methane related accidents been avoided with improved detection, drainage, or ventilation systems? If so, what is the scope of the needed improvements and the estimated cost of the needed improvements?

**(g) Was there, or is there still, an opportunity to develop a CMM use project(s) that will offset the cost of improved drainage and ventilation practices?**

**(h) Calculate the estimated economic benefit that would arise from improvements to the safety programme at the mine. This calculation could include the following benefits accrued from improvements which allow certain costs to be avoided (+) and the economic costs (-) associated with improvements to mine safety systems and methane use projects:**

- (i) (+) Avoided costs associated with injuries and loss of life (penalties, settlements, etc.)
- (ii) (+) Avoided costs associated with mine rescue and related activities
- (ii) (+) Avoided increases in the cost of capital, insurance premium, etc.

- (iii) (+) Avoided costs accrued from loss of production and/ or loss of reserves
- (iv) (+) Avoided costs accrued from repairs to mine and/or replacement of equipment
- (v) (+) Avoided costs accrued from loss of invested capital if mine was closed or districts or sections abandoned
- (vi) (+) Avoided costs caused by mine closure accrued from loss of jobs at the mine and related service companies, and the consequential economic impact on the local community.
- (vii) (-) Costs associated with improvements to detection, drainage or ventilation systems
- (viii) (-) Costs associated with the capital investment in methane use projects offset by (+) the value of the converted energy produced and sold.

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