

T@W Good Practice Form : Slovakia

Coal bed methane utilisation

Setting:

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|------------------------|-----------------------------------|
| Title: | Coal bed methane utilisation |
| Country: | Slovakia |
| Location: | Town Handlová, district Prievidza |
| Start date: | 2005 |
| End date: | - |
| Technology keyword(s): | Coal mining technology |
| Host sector: | Coal mining |

General description:

Summary:

Coal mining results in release of significant amounts of methane gas to the atmosphere. The gas sequestered near to coal deposits seeps into mine shafts and must be removed to ensure the safety of the mineworkers. Coal Bed Methane (CBM) in the Slovak mines is usually vented to the atmosphere.

The described project uses specialized technology to capture the gas and to utilize it by electricity and heat production. The project aims:

- construction of degassing system
- electricity production for own consumption (40% of the captured CH₄)
- heat production (50%)

During the project activity approximately 10% of the gas will not be captured due to efficiency of the equipment. The exact amounts will be monitored continuously.

Through the improvement of current drainage systems, the extracted gas will be used for power generation and waste heat recovery.

Aims:

To eliminate negative influence of coal bed methane streaming into atmosphere and its energetical utilisation was installed CHP unit for the combined heat and power production using collected coal bed methane

Summary of Results: Coal bed methane collected in amount 1.264.000 m³/year by degasing system shall be used to produce power and heat using gas engine based CHP technology.
CHP Units with performance 2 x 160 kWel shall produce electricity, substitute to grid electricity approximately 2,560 MWh per year.

Technical details:

Technical details: The used CHP Technology - TEDOM CENTO 160SP BIO is dedicated to production of energy from gas containing CH₄.

Energy data:

Energy data: In this project, 1.264.000 m³ of brown coal bed methane/year is expected to be used for combined heat and power production. The project installed 320 MW of power capacity produces yearly 2,560 MWh for investors own consumption.

Energy saved/generated: The project was created for the remaining of negative influence by coal bed methane streaming in to atmosphere. Utilisation of this methane containing CH₄ brings production of 2,560 MWh of green energy yearly.

Monitoring: The approved baseline and monitoring methodology ACM0008 "Consolidated baseline methodology for coal bed methane and coal mine methane capture and use for power (electrical and motive) and heat and/or destruction by flaring" (Version 02, 28 July 2006) is applied for the project.
The Monitoring Plan (MP) has been provided for the necessary methodological, data collection, and auditing needs and procedures for recording the project variables.

Environmental data:

Environmental data: Environmental benefit resulted from the project is remaining of the negative influence caused by free coal bed methane streaming in to atmosphere.

GHG-emission reductions: GHG-emission reduction resulted from the project are 15,450 t CO₂equivalent/year

Methodology: The baseline is total atmospheric release of the methane and the project. Project activities include the following method to treat the gas captured:

1. The methane is captured and destroyed through utilisation to produce electricity; in case of technical failures, maintain works or calibration works, where the gas engines will be switched off, a flare will be installed;
2. Emission reductions will not be claimed for displacing or avoiding energy from other sources;
3. The remaining share of the methane, to be diluted for safety reason, will still be vented;
4. All the CMM captured by the project will either be used or destroyed.

Monitoring: The approved baseline and monitoring methodology ACM0008 is applied to the Project activity. For the data collecting is responsible plant operator.

Contribution to Sustainable Development: Contribution of project to sustainable development in the Slovak republic is following:

- It is the demonstrating project for the using of methane contained gas for the electricity production
- The electricity production from the domestic sources can decrease the energy depending of the country
- For the project realisation was in used local suppliers

Economic data:

| | |
|---------------------------------|-----------------|
| Economic data: | N.A. |
| Financing: | Private sources |
| Capital cost: | N.A. |
| Operational Costs: | N.A. |
| Payback: | N.A. |
| Energy Production costs: | N.A. |
| Other savings: | N.A. |

Additional Information

Printed or electronic reports or other literature available:

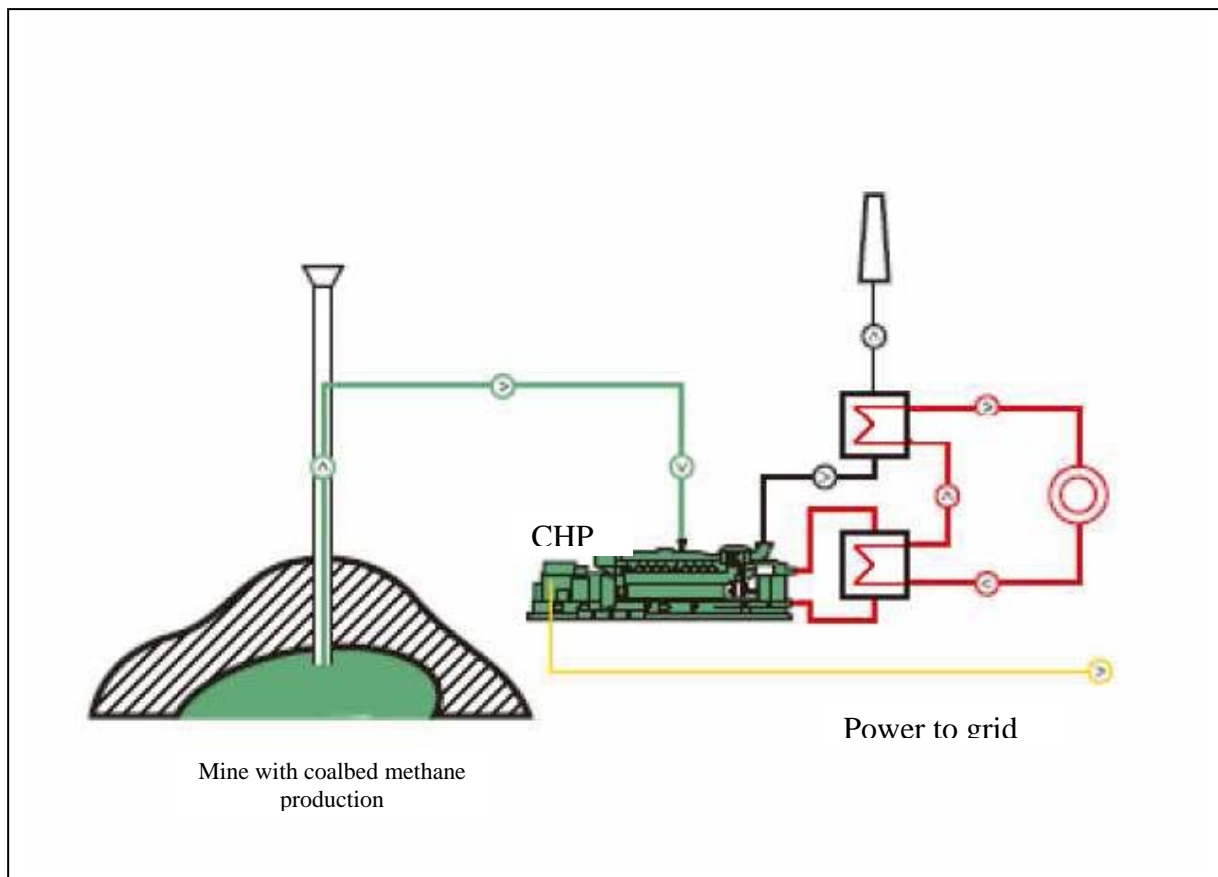
Title: "Succesful CHP-Projects in Slovak Republic", published by Austrian Energy Agency 2006

Address for download of electronic document: www.energyagency.at

Photo Library

Pictures:

Scheme of energetical using of mine gas:



Contact information (to be duplicated for each contact for this project):

Type of Organisation: Host company

(e.g. technology supplier, service provider, host company, financing body, project management)

Technology keyword(s) specific to this organisation:

Organisation / Agency: Hornonitrianske bane, a.s. Prievidza

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Type of Organisation: Technology supplier

(e.g. technology supplier, service provider, host company, financing body, project management)

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